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Final Proposals and Implementation Plan

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TABLE OF CONTENTS

TABLE OF CONTENTS.....	4
Abbreviations, Acronyms and Glossary	5
1 Executive Summary.....	6
2 Timeplan.....	11
3 Context & Background.....	13
4 Practical Steps for Jurisdictions to Undertake for an Initial REM	25
5 Full REM.....	34
6 Other jurisdictions participating in the REM	38
7 Implementation plan	42
8 Albania – Current position and plans	43
9 BiH – Current position and plans	50
10 Croatia – Current position and plans	57
11 Macedonia – Current position and plans	64
12 Montenegro – Current position and plans.....	71
13 Serbia – Current position and plans	78
14 UNMIK – Current position and plans	85
15 Full Regional Market Requirements to be fulfilled	92
16 Conclusion.....	101



Abbreviations, Acronyms and Glossary

Atkins	Atkins International, a partner firm in the Consortium
Beneficiary Countries	Albania, Bosnia and Herzegovina, Croatia, Serbia/Montenegro, UNMIK Kosovo (pursuant to UN resolution 1244) and the former Yugoslav Republic of Macedonia
CARDS	Community Assistance for Reconstruction, Development and Stabilisation
CBT	Cross Border Trade
CEER	Council of European Energy Regulators
CMcK	CMS Cameron McKenna, a partner firm in the Consortium
Consortium	The PwC/CMcK/Atkins consortium, led by PwC, that has been awarded the contract to implement the project
DAM	Day ahead market (for the regional wholesale market)
EC	European Commission
EKC	Elektroenergetski Koordinacioni Centar d.o.o. (Electricity Coordinating Center)
ECSEE	Energy Community in South East Europe
Full REM	Full regional electricity market consisting of the principles of the SMD
IME Directive	Directives 96/92/EC and 2003/54/EC
Initial REM	Initial regional electricity market consisting of the minimum requirements to participate in regional market, designed for implementation by the end of 2005
ISO	Independent System Operator
MO	Market Operator
Participants	Key regional market participants, consisting of producers, suppliers, customers who are free to choose their own supplier, regional market operator and transmission system operators
PHLG	Permanent High Level Group of the REM MoU
PwC	PricewaterhouseCoopers LLP, the firm leading the Consortium
REBIS	Regional Balkans Infrastructure Study – Electricity
REM	Regional Energy Market
REM MoU	Memorandum of Understanding on the Regional Energy Market in South East Europe and its Integration into the European Community Internal Energy Market, The Athens Memorandum 2003, signed December 8, 2003.
RFT	Regulated fixed tariff regime
SEE	South East Europe
SEEERF	South East Europe Electricity Regulation Forum
SETSO	South Eastern European Transmission System Operators
SMD	Standard Market Design
ToR	Terms of Reference for the Regional Balkans Infrastructure Study Electricity issued 20 August, 2003.
TSO	Transmission System Operator
UN	United Nations
UCTE	Union for the Co-ordination of Transmission of Electricity
USAID	US Agency for International Development
ZEKC	Zajednicki elektroenergetski koordinacioni centar (Joint Power Coordination Centre)



1 Executive Summary

1.1 Background and context

The REBIS project ToRs require the Consortium to prepare a set of final proposals that:

- Summarises the steps that each of the CARDS seven jurisdictions covered in the study have made towards the implementation of a Regional Electricity Market (REM) in South East Europe (SEE). These jurisdictions are Albania, Bosnia & Herzegovina, Croatia, FYR Macedonia, Montenegro, Serbia and UNMIK;
- Outlines the steps remaining to be undertaken within each of the jurisdictions to achieve an operational market, including an implementation plan that identifies the priority tasks and timescales;
- Take account of the electricity market conditions in neighbouring jurisdictions; and
- Puts forward proposals for monitoring progress over the implementation period.

This report is the REBIS Final Proposals document.

1.2 Overview of the proposals

The proposals are based on taking a practical approach to development of a REM, rather than focusing on theory alone. We recognise that the jurisdictions are at different stages of technical, commercial and institutional readiness in their own electricity liberalisation processes; and that these also differ from the position of their neighbours in the EC, Romania and Bulgaria. We therefore focus on a two-stage REM implementation process:

- An Initial REM to be implemented by the end of 2005, highlighting the minimum requirements for an operational market, with the recognition that the effectiveness of the market would be improved if the minimum requirements can be exceeded; and
- A Full REM, to be implemented once the technical, commercial and legal requirements can be put in place. Such a market would be compatible with those seen within the EC.

The progress of each jurisdiction towards the Initial REM is summarised individually, and the tasks remaining to be implemented identified. We highlight whether there are programmes in place to address each of the tasks remaining, and the timescale by which they need to be completed if an Initial REM is to become operational by the target date.

For the Full REM, we have compiled a table identifying the tasks still to be implemented across each of the jurisdictions, many of which are at similar stages of development. Additionally, a number of tasks are regional in nature.

We consider the benchmarking exercises that have been undertaken over the past year (for ministries, TSOs and regulators) have been invaluable in providing a picture of where progress has been made towards objectives and where difficulties have arisen. We believe that these should continue throughout the period of REM development, and should be



expanded to address market progress. If practical constraints permit, such benchmarking exercises should be undertaken twice a year.

1.3 Initial REM

Our basic premise is that an Initial REM should build upon the existing trading that occurs in SEE, and that it must allow generators, suppliers, eligible customers and traders the right to purchase and sell electricity to other participants in each jurisdiction in the Initial REM. This premise is contingent upon a number of preconditions, of which the key ones are:

- Independent TSO/ISOs, regulators and market operators;
- Third party access, a consistent approach to interconnector capacity allocation and agreed scheduling principles; and
- Common treatment of contractual flows and deviations, with a regional dispute resolution process.

The Initial REM will be a simple bilateral contracts market, with regulated prices. The number of participants will be limited, both due to the capabilities of IT systems and the level of liberalisation within the jurisdictions. We consider that December 2005 is a realistic target for such a market to be operational, as long as the necessary support is provided to complete the tasks identified.

Practical support is required in each jurisdiction to achieve timely implementation, not all of which has yet been committed. Tables are provided for each jurisdiction; however the main areas where further support is required and programmes are not in place are:

- Institution building for TSOs/ISOs (including Market Operators) in Albania, BiH, Montenegro and UNMIK;
- Systems integration and technical system requirements in BiH, Croatia, Montenegro, Serbia and UNMIK;
- The development of a national grid code in Albania and Serbia.
- Support for enabling switching of eligible customers in Albania, BiH, Montenegro and UNMIK;
- Third party access and/or interconnector access procedures for Macedonia and UNMIK;
- Ensuring consistency in the determination of approaches for Cross-Border Trading (CBT) charges and revenues for Croatia and UNMIK, who do not currently participate in the regional CBT scheme;
- The development of national market rules and an implementation plan for Macedonia and Montenegro; and an implementation plan for Albania, Serbia and UNMIK; and
- Institutional support in the areas of governance, public accountability and authority for all seven jurisdictions (to differing degrees).



1.4 Full REM

The Full REM requires a more complex methodology to be agreed between the participating jurisdictions, a higher standard of technical operational capabilities and more complex IT systems support. The extent of the differences from the Initial REM will depend on the stage of development of each national electricity market. In particular, countries with more developed markets such as Romania and Bulgaria are likely to be closer to fulfilling the requirements for participation in a full REM than the CARDS countries.

We highlight four main differences between the Initial REM and the Full REM. We see the Full REM as having more participants, and as a consequence, many more contracts. We envisage a day-ahead market (DAM), which would be operated by a SEE Market Operator (SEEMO), co-ordinating the cross-border activities. We consider that a capacity support mechanism is likely to be required, to support the investment in new generation in the region and to attract private sector investment.

The Full REM will be a full bilateral contracts market with a voluntary day-ahead market and market-based balancing prices. It may include a separate regional market for ancillary services (although national markets for ancillary services may remain for some time) and participants may offer financial contracts through brokers and/or power exchanges. The DAM could also handle cross-border allocations by an implicit auction. The principles of a REM based on the CEER Standard Market Design (SMD) are agreed and form the basis of our Full REM assumptions. Further discussions are required to fully specify and agree the details of the tasks underlying the principles, although we have included our suggestions as to the likely requirements and timescales for implementation. In particular, there will be a need for:

- A consistent approach to the development and monitoring of ancillary services contracts across jurisdictions;
- Harmonisation of national market rules to ensure a smooth interface between the markets at a regional level;
- Harmonisation of some aspects of the national licensing regime and regulatory arrangements;
- Complementary programmes for tariff reform in individual jurisdictions to avoid perverse incentives for market participation.

Other tasks required will be regional by nature, although will need to be located in one of the participating jurisdictions. For example, systems and procedures for the operation of the DAM, settlement, dispute resolution and market monitoring will need to be developed, as well as interfaces with existing systems. The cost of IT systems and associated communications is likely to be significant and should be planned carefully to ensure that timescales are compatible with developments in capabilities in each jurisdiction. Institutions such as power exchanges are not strictly necessary for a Full REM, but are an option that may well have benefits for the market.



1.5 Regional institutions

Along with other initiatives, we have identified a need for a number of regional bodies, whose roles are likely to develop as the REM becomes progressively more complex. In particular, we see a need for a regional market operator (the SEEMO), regulator, TSO and disputes resolution committee (which could be part of the regional regulator), with regional decision making body or steering group with representation from all jurisdictions. This would be consistent with the proposed Ministerial Council.

In each case, there will need to be clear demarcation of responsibilities between the regional bodies and their counterparties in individual jurisdictions. For both the regional regulator and TSO, we see the roles as primarily advisory roles with a focus on interfaces between jurisdictions and co-ordination of actions and development plans, although the regional regulator should be able to propose market changes to the decision-making body. For the SEEMO, we see the role as having both an operational and administrative aspect.

CEER WG SEEE and SETSO are performing some aspects of the regional regulator and regional TSO roles respectively, and we support the continuation of their activities. Formalising the scope of their work, the funding process and the participation requirements from each jurisdiction is important, and should indicate how the roles should change as the Initial REM is implemented and develops further into the Full REM. We believe a programme should be put in place during 2005 to address these issues.

The PHLG currently takes on the decision-making role in relation to the REM, and this may remain the most appropriate body to do so in the future in conjunction with the Ministerial Council. We anticipate that it would also be responsible for determining and monitoring governance arrangements. However, once the number of traders and eligible customers increases to a level where their voices should be heard in decisions on future market development, the criteria for membership of the body will need to be revisited.

There has been discussion of a Regional Trading Centre or Power Exchange. We do not see this as a necessary component of the Full REM in its early stages, as contracts can be traded bilaterally or via brokers. Power exchanges already exist within the region and we consider it desirable that they develop to take on a regional trading role. Such a role could be developed centrally as part of the REM or allowed to develop in response to market requirements.

1.6 Conclusion

Much progress has been made within Albania, Bosnia & Herzegovina, Croatia, FYR Macedonia, Montenegro, Serbia and UNMIK towards electricity market liberalisation consistent with progress towards a REM. We found recognition of the benefits to be gained from participation in a REM and an understanding of areas where further support is required from donor bodies. There are a number of programmes in place focusing on market reform, institutional support and technical improvements to enable a REM, but gaps remain. We have identified a range of additional programmes required during 2005 which, if implemented, should enable an Initial REM to become operational by the end of 2005.

It is clear that the CARDS jurisdictions have considerable work to do before implementing a Full REM with a day-ahead market and market-based balancing mechanisms. Much of this



relates to systems development and infrastructure, although institutional strengthening and establishment of the regional market is also required. By adopting a phased approach, we believe that additional features can be added to an Initial REM, such that a Full REM could be operational by the end of 2007. However, to achieve this date, decisions on the details underlying the market structure will need to be made during 2005.

We have seen some collaboration between the various donor bodies working in the region and co-operation between their consultants, but this could be improved. We consider this is vital for achieving timely implementation of both the Initial and Full REM, as co-operation allows efficiency gains for the utilities, regulators and governments: knowledge-sharing increases understanding and leads to more informed recommendations and better value for money can be achieved through consistency.



2 Timeplan

The table following summarises the progress that each jurisdiction has made in implementing the steps necessary for an Initial REM to operate, and highlights what additional programmes are required to achieve an operational date at the end of 2005.

The table should be read as follows:

- Each section relates to a specific aspect of the REM that needs to be implemented, such as TSO/ISO or third party access;
- There are two columns relating to each jurisdiction:
 - The first column identifies the programmes already completed or in place to implement a specific task and highlights the expected completion date eg legal separation of the TSO in Albania is expected to be complete in the first half of 2005;
 - The second column identifies the programmes that are not yet in place, but which are required to implement an Initial REM. It highlights the time by which the programme must be complete if the Initial REM is to be in place at the end of December 2005.

The table show the status of each task, based on our understanding from the jurisdictions and other information gathered during the project. We have used a system of “traffic lights” to differentiate between the jurisdictions. We define each “traffic light” as follows:

- **GREEN:** The task has been completed (or is scheduled for completion in the very near future) and no further action required to achieve the necessary standard;
- **AMBER:** There is a programme in place with agreed funding and timing to achieve implementation of the task before the target date for the REM;
- **RED:** The task has been identified as being required but there is not a funded programme in place, or the task had not been identified as a priority for implementation. External support will be required if the target date for the REM is to be met.

More details on each jurisdiction and on the tasks summarised in this table are contained in the main body of these Final Proposals.



Timeplan for the implementation of an Initial REM by 31 December 2005

	Albania		BiH		Croatia		Macedonia		Montenegro		Serbia		UNMIK	
	In Place	Required	In Place	Required	In Place	Required	In Place	Required	In Place	Required	In Place	Required	In Place	Required
1. TSO/ISO														
1.1 Legal & reg framework	Q105		H204		H105		H204		H104		Q105		H104	
1.2 Asset separation	H205		H205		H105		Q105		H205		H205		H205	
1.3 Legal separation	H205		H105		H105		H105		H105		H105		H105	
1.4 Institution building		H205		H205	H205		H205			H205	H105		H205	
1.5 Systems integration	H205			H205		H205		H205		H205	H205		H205	
1.6 Technical Requirements		H205		H205		H205		H205			H205			H205
2. MO														
2.1 Legal & reg framework	H204		H105		H105		H105		H104		H205		H205	
2.2 Institution building		H205		H205	H105		H105		H205		H205			H205
2.3 Systems integration		H205		H205	H205		H205			H205		H205		H205
3. Independent regulator														
3.1 Legal & reg framework	Q105		H104		H204		H204		H104		H105		H104	
3.2 Institution building	H205		H205		H205		Ongoing		H205		H105		H205	
3.3 Issue licences	Q105		H205		H104		H105		H205		H205		H105	
3.4 Write grid code		H205	H105		H105		H205		H105		H205		H205	
3.5 Publish G, T & D tariffs	H205		H205		H205		H205		H205		H205		H205	
4. Competition for eligible customers														
4.1 Set customer threshold	H105		H205		Q105		H205		H205		Ongoing		H205	
4.2 Switching procedures		H205		H205	H204		H205			H205	H205			H205
5. Third party access														
5.1 Legal & reg framework	H205		H105		H105		H105		H105		H205			H205
5.2 CBT participation	Ongoing		Ongoing		H205		Ongoing		H105		Ongoing			H205
5.3 Interconnector access	H205		H105		H105			H105	H105		H205			H205
6. Market rules														
6.1 Agree market structure	H105			H105	H105		H105			H105	H105			H205
6.2 Write market rules	H105		H105		H205			H205		H105	H105			H205
6.3 Implement market rules		H205		H205	H205			H205		H205	H205			H205
7. Governance														
7.1 Public accountability	H205		Q105		H105			H205	H204			H205	H105	
7.2 Authority		H205		H205	H205			H205		H205		H205		H205



3 Context & Background

3.1 Terms of reference

The ToRs of the REBIS project require the Consortium to prepare a set of final proposals that summarises the steps each of the jurisdictions covered in the study have made towards the implementation of a Regional Electricity Market in South East Europe. The proposals should also outline the steps remaining to be undertaken within each of the jurisdictions to achieve an operational market, including a final Implementation Plan that considers the priority tasks and timescales. Within the report, proposals for tracking progress should be highlighted.

The Consortium prepared an Interim Proposals report in June 2004, which was circulated to stakeholders in the beneficiary jurisdictions. In September 2004, the Consortium undertook a mission to the CARDS countries to discuss with the ministries, regulators and utilities the Interim Proposals document and the latest developments in the sector. The Consortium held a workshop at the Athens Energy Week in October 2004. At the workshop, initial timelines were presented outlining the timescales within which each jurisdiction would need to undertake specific tasks to achieve an Initial REM by the end of 2005, and a Full REM based on the SMD by the end of 2007. Additional comments were requested from stakeholders, other interested parties, regional bodies, donors and other consultants working in the region, so that the Final Proposal document would be as comprehensive as possible.

This document forms the Final Proposals.

3.2 Background and context

The proposals focus on the electricity sector development of the seven CARDS jurisdictions. The main features are:

- All have relatively small electrical systems;
- Many of the generation plant are old and require refurbishment to improve efficiency and extend operating lives;
- Investment is required in networks, communications systems and metering; and
- The sector liberalisation processes are at an early stage.

The seven CARDS countries in this study had a combined energy consumption in 2003 of 79TWh. UCTE report total imports for all seven countries were 20TWh in 2003 while total exports were 12TWh, giving a net import for all countries of 8TWh, or approximately 10% of total consumption. Electricity trade is therefore already an important part of these country's energy source.

There is a history of cross-border trade, which has been formalised in the CBT mechanism during 2004 and is expected to be further developed during 2005.

The rationale for the set-up of a REM is three-fold:



- Recognition that operating a REM will require less investment in generation and transmission infrastructure over time to achieve a given level of security of supply in all jurisdictions;
- To comply with EC Directives for the creation of competitive electricity markets;
- To encourage investment in the electricity sector in the region.

Many programmes have been undertaken over recent years to support the liberalisation of the electricity sector in each of the jurisdictions, including support in setting up institutions, providing training and support to the new institutions and in benchmarking the progress of institutions across the region. Other programmes have advised on the form of competitive market suitable within a jurisdiction and on unbundling of utilities.

The REBIS project is designed to summarise the current position of each of the jurisdictions as they progress towards a REM, and to highlight the steps remaining.

3.3 Context within which the proposals sit

The Final Proposals take account of other work undertaken in relation to a REM, in particular the work undertaken by:

- CEER WG SEEER on a Standard Market Design and on a transitional REM “discussion paper on the options for the transition phase of the ECSEE regional energy market, dated November 2004”. Although the principles covering the introduction of a Standard Market Design (“SMD”) have been agreed by the PHLG, the action plan is not expected to be agreed until March 2005. Similarly, the concepts outlined in the initial market paper are generally accepted but more detailed plans have not yet been proposed;
- The EC paper “the Discussion and Consultation Note on an Electricity Transition Strategy for SEE”. The Commission paper is still to be finalised and the EC has requested comments on the paper by the end of 2004;
- EdF on a Regional Grid Code; and
- Pierce Atwood, Hunton & Williams and SEETEC on benchmarking of legal, regulatory and technical progress in the jurisdictions.

Many of these initiatives are ongoing, so any discussion, analysis, conclusion or proposal in this Final Proposals report take account of information available at the end of October 2004 unless otherwise specified.

The Consortium’s analysis has also included review of relevant legislation (including legislation related to the electricity sector, competition laws and laws relating to foreign investment, where available), discussions with stakeholders and interested parties, and review of reports from other recent projects undertaken in the region.

The jurisdictions covered by the REBIS study are progressing towards a liberalised and competitive electricity market at varying rates, generally slower than neighbouring countries that would also form part of a REM in SEE. This gives rise to questions as to the



appropriate balance to be struck between a fully functioning REM (based on an SMD) and a REM that allows each jurisdiction to participate. We concluded that a two-stage approach would be the most practical. We indicated in our Interim Proposals report that it is not necessary for the full features of an SMD to be implemented for an Initial REM to develop.

We propose two stages for a REM, which are further described in this report:

- *Initial REM:* In this stage, a market will be established based on minimum requirements to allow the jurisdictions to participate in a regional market. It is simple in nature and designed for implementation by the end of 2005. We recognise that certain jurisdictions may exceed these requirements and have additional capabilities employed within national markets.
- *Full REM:* In this stage, the market is assumed to be an implementation of the principles of the SMD, as outlined by CEER. Our assumption is that such a market would not be operational before the end of 2007.

It is important to note that the Initial REM is designed to be built upon in a modular fashion, such that additional features can be incorporated dependent on the capabilities of the market participants. It may be feasible to operate additional features with only a subset of participants, by making it optional. It is also designed so as to be complementary to the development of national markets.

3.4 Structure of this report

Purpose of report: This Final Proposals report seeks to provide a coherent and realistic Implementation Plan for the implementation of the Initial REM and Full REM. It identifies the actions that need to be taken by each of the beneficiaries and highlights those actions that do not yet have firm plans and timescales. It proposes an approach to monitoring progress, building on work that is already planned by the donor group, and summarises areas where collaborative approaches may reap maximum benefits.

Structure of report: The report sets out the:

- general background to a REM;
- practical steps required to achieve an operational Initial REM;
- practical steps required to move from an Initial REM to a Full REM;
- status of other SEE countries, such as Romania, Bulgaria and EU Member States, in terms of progress towards an Initial and Full REM;
- current status of the jurisdictions and the steps each needs to take to participate in an Initial REM and to develop towards a Full REM; and
- conclusions

Structure of Appendices: Additional detail is provided on the technical and legal/institutional compliance facets of a regional electricity market. We highlight:



- technical issues, in particular TSO requirements, congestion and constraints; and
- legal issues, in particular compliance with the IME Directive.

Both appendices are provided as separate documents.

3.5 The components of a competitive electricity market

There are many competitive electricity markets throughout the world; entities undertake different roles and responsibilities: the terms used to describe specific market characteristics are not always consistent. This section summarises the roles of the main entities likely to form part of the SEE Initial REM or Full REM, their roles and responsibilities, as well as key market characteristics.

- *Independent regulator (regional and national)*: A regional regulator is considered to one that co-ordinates regional issues between participating jurisdictions, undertakes market monitoring and dispute resolution roles, and has the ability to recommend market changes to the governing body. It should be independent of all stakeholders and financed independently. A national regulator should be financially and institutionally separate from the government and utility, be responsible for the setting of tariffs and tariff methodologies, for monitoring of the market and for issuing licences. A national regulator may also play a role in the resolution of disputes.
- *TSO (regional and national)*: A regional TSO is considered to be the entity responsible for the regional Grid Code, for regional operational issues (where it would co-ordinate between national TSOs) and for liaison with the SEEMO. National TSOs are responsible for the operation and maintenance of the transmission network within its jurisdiction, in accordance with the rules set out in the national Grid Code, for scheduling, and balancing the national system, and may also be responsible for dispatch. A key role of the national TSO is to permit third party access to the network on a transparent, published and non-discriminatory basis. Note that there may be an ISO responsible for the operation of the transmission network in some jurisdictions.
- *MO (regional and national)*: The regional MO (SEEMO) is considered to be responsible for both administrative and operational aspects of the REM. It would be the body that receives day-ahead market bids and operates the systems to determine the day-ahead schedule and post-event settlement. It would provide the regional TSO with operational data and any updates, and would provide participants with data. National MOs are responsible for operating the national market, providing data to participants and reporting on performance to support monitoring. In many cases, the MO function may be a part of the TSO's roles. National MOs will need to liaise with the SEEMO.
- *Market monitoring and compliance*: The regional regulator should be responsible for monitoring the performance of the REM to ensure that it is operating as planned and that the rules give effect to the principles. Monitoring should also identify any instances of abuse of market rules and market power, or any aspects that are not working as intended. Similar requirements should apply in national markets.



- *Ancillary services:* In a national market, the TSO would operate any ancillary services market or would enter into ancillary services contracts on a bilateral basis. The most appropriate structure for a regional ancillary services market in the SEE requires further investigation. Typically the sorts of products that might be sourced in an ancillary services market are operating reserve, reactive power and black start capability. There may be restrictions on how the products can be provided, the timescales over which they are required and the locations where they are needed and the ability to measure the provision of the services – all of which might restrict the number of participants in such a market.
- *Interconnector access and capacity allocation:* In a REM, it is important that participants other than TSOs have access to interconnectors for the purposes of trading electricity. A consistent method of allocating capacity across the region is required, which needs to address factors such as the amount of capacity that one participant can acquire, the duration of allocations, and re-allocation of capacity not used by the purchaser. Capacity auctions for all or some of the interconnectors in the REM would be required, and we understand that SETSO has a programme to investigate this issue.
- *Transmission system pricing:* The price of access to, and use of, the system should be published and known in advance, to give appropriate signals to the market.
- *Bilateral trading and financial trading:* The REM will be based on bilateral trading ie physical delivery contracts between two participants. These may be supplemented by financial contracts, either on a bilateral basis, via a broker or a power exchange. We assume that standard contracts will be developed, to facilitate the development of financial trading, and that the market participants themselves will develop standardised contracts over time together with the market operators. Although standard contracts are not specifically required for a REM based on bilateral physical delivery contracts, they would encourage the development of financial instruments and increased trading.
- *Day-ahead market:* A regional DAM will produce a merit order based on submissions from participants providing price and volume bids for operation. The SEEMO will request bids by a certain time and will publish the results later that day.
- *Balancing market or mechanism:* We do not foresee a regional balancing market, but anticipate that following the publication of the day-ahead schedule, each national TSO will be responsible for balancing its own system. In the early stages of the Initial REM, whilst individual markets are also in their infancy, we would expect that balancing prices would be regulated, based on agreed tariffs. As markets develop and more competition is introduced, it may be possible to move to market-based balancing prices.
- *Power exchange:* There may be one or more power exchanges within the region providing a forum for participants to trade standard power contracts over various timescales, which would provide an alternative mechanism for regional trade to direct bilateral contracts. The operator of the power exchange is often the counterparty to each trade. There would be financial guarantees required of participants. Power exchanges often evolve in electricity markets to meet the need for market liquidity and



both offer the advantages of enhanced price discovery and greater market efficiency. One power exchange offers the prospect of greatest liquidity whilst multiple power exchanges offer the prospect of competition.

3.6 CEER Standard Market Design – Principles

The basic principles for the South East Europe Standard Market Design (SMD) are laid down in a series of papers culminating to the most recent CEER Paper “Discussion Paper on the Options for the Transition Phase of the ECSEE Regional Energy Market” dated November 16, 2004. This was produced following a series of multilateral discussions, papers and presentations by CEER leading to the June 2004 4th Athens Process Forum recommendation to adopt the schedule put forward by CEER. A summary of the main recommendations of these papers is given below.¹

The principles of the SMD have been agreed and approved in the Athens Forum process, although the SMD structure requires further development. We have taken the principles of the SMD as the model for a Full REM, and use similar terminology where appropriate in our proposals.

Objectives of SMD

The objective of the SMD “is the physical operation of a transparent and competitive Regional Electricity Market throughout the SEE, based on the principles of the EU Directives and of the forthcoming Treaty...[so that] electricity will flow among the countries of the region as if it was flowing within a single country...[and this has] been widely accepted by stakeholders.”² In particular, CEER specify:³

- “The need for new investments;
- The different pace of the reform process of the electricity markets in the countries of the region and the corresponding differences in the production capacity and cost structure, the end user prices, the experience of the national Institutions on the operation of a competitive market, etc.;
- The need to ensure a smooth transition from the current situation to a REM, without exposing regional consumers to unbearable risks and without jeopardizing the viability of national jurisdictions;

¹ This summary has been produced to aid in the understanding of the contents of this Final Proposals report. Although every care has been taken to ensure that the CEER paper is summarised accurately, this summary should not be taken as a comprehensive précis of the CEER paper.

² “Discussion Paper on the Options for the Transition Phase of the ECSEE Regional Energy Market” CEER WG SEEER, Nov. 16, 2004.

³ As set out in the CEER TF SEEER Discussion Paper dated 05/07/03.



- Ensuring compatibility and consistency between the technical operation of the electricity system and the functioning of a new financial/commercial mechanism under the regional market.”

The CEER paper seeks to incorporate the phased approach envisaged by the EC whilst retaining the benefits of the harmonized approach proposed by CEER. The concern is that national reforms should be compatible with a regional electricity market in the short term. It is intended that a regional market should be a natural evolution of national market reforms. Constant monitoring and benchmarking of national institutions should be accompanied by the appropriate institutional reforms of a regional nature.

Key SMD principles

The key principles recommended for the SMD are:

- Types of transactions: Electric energy transactions at a regional level may be carried out through both:
 - Bilateral contracts with physical delivery; and
 - SEE regional wholesale Day Ahead Market (DAM) which will:
 - establish a place for power exchange transactions (supply and demand) for the following day;
 - require DAM participants to provide prices at which they offer electricity into the market or seek to buy from the market;
 - set a market-clearing price that is formed from such bids and offers of the market participants.
- CBT: Imports and exports will be handled in the DAM and the corresponding contracts will participate in the formation of the DAM price.
- Participants: The key market participants are expected to be the following
 - *Producers*: licensed operators of power plants.
 - *Suppliers*:
 - Regulated suppliers (who will supply non-eligible customers via a Regulated Fixed Tariff Regime);
 - Non-regulated suppliers (load-serving utilities with rights to carry out wholesale trading, in the DAM and through bilateral contracts, at a national and regional level).
 - *Customers*: who are free to choose their supplier and can also act as self-suppliers for meeting their own demand.



- *South East Europe Market Operator (SEEMO)*: to be established jointly by all national TSOs or other market operators. It would not be responsible for carrying out balancing either at a national or at a regional level. It would be responsible for:
 - operating the DAM;
 - carrying out the financial settlement of the wholesale market transactions between market participants;
 - the collection and the processing of all relevant information from national TSOs, in order to facilitate their work in providing real-time balancing and the settlement of imbalances at national level.
- *Transmission System Operators (TSOs)*: who are responsible for the physical (real-time) operation and balancing of the market and the settlement of imbalances at national level.
- *Electricity exchanges across zones*. CEER proposes that the SEE area be divided into single price zones. These zones would be separate areas within the balancing provider could more easily fix any network problems. The definitions of the zones may change over time as a result of building additional transmission infrastructure, thus reducing network constraints.

Prerequisites for the SMD

A number of initiatives at a national and regional level are ongoing, and are considered prerequisites to the operation of a liberalised market. These are consistent with the steps being taken in each jurisdiction and described later in this report, including establishment of independent, unbundled regulators and TSOs, rules for TPA, designation of eligible customers and the setting of use of system tariffs. CEER anticipate the consolidation of the CBT into the larger ETSO-CBT, the implementation of interconnector capacity auctions under the Florence process, removal of import and export restrictions and recognition of licences between countries. Bilateral contracting is seen as the mainstay of the future market, although the large size and duration of some existing long term contracts is a cause for concern. The development of a regional DAM is required to facilitate trade among smaller jurisdictions, as well as with the larger jurisdictions who may have their own DAMs. The detailed development of the market rules is proposed in the revised action plan.

Transitional steps for the SMD

CEER propose that the regional institutions be put in place as early as possible to ensure a smooth transition to the regional market. Their independence from regional market stakeholders must be protected, possibly by being hosted by various countries. Apart from the bodies likely to be established under the forthcoming Treaty, namely the Ministerial Council, the Permanent High Level Group and the Secretariat. CEER addresses the requirements for four regional institutions to support the SMD:



- *SEE Regulatory Board*, composed of representatives of the national regulators, focused on the operation of the regional market. In a separate paper,⁴ CEER outline 5 levels of activity for the Regulatory Board which are; 1) advisory role to the Ministerial Council to develop the regional regulatory framework, including consistency with national frameworks; 2) setting detailed statutory, technical and regulatory rules with the right of initiative to table proposals to the Ministerial Council; 3) delegation of executive powers from the Ministerial Council and PHLG to address technical details of the daily market operation; 4) development of day-to-day supervision, development and enforcement of the regional regulatory framework to ensure a level playing field, identify inconsistencies and issue recommendations; and 5) act as dispute settlement authority at the request of national regulatory authorities in the case of disputes involving more than one country. To be established in January 2005.
- *Regional Trading Centre*, in order to enhance the CBT mechanism, particularly smaller country participation. The centre would be a self-financing institution, under regulatory supervision and control, and not necessarily required for the successful implementation of the SMD. The voluntary market would initially offer simple Over-The-Counter products with the important role of providing, if necessary, financial guarantees for market participants. The Centre would submit requests for power flows to TSOs and may, in future, act as the regional market operator, when the regional market is fully operational. To be initially operational by January, 2006.
- *Technical Institution for inter-TSO balancing*, in order to link the parallel operations of a regional DAM and national balancing arrangements. This body will provide a mechanism for the accounting and settlement of the real time balancing and ancillary services' provision that will be performed between the national TSOs. It may conclude contracts, buy energy from TSOs and will be linked with the coordinated congestion management mechanism and the CBT. To be initially operational by January 2006.
- *Regional Energy Information Centre*, as a centralised provider of decision making reports on the SEE regional market. This is proposed chiefly to replace the ad-hoc commissioning of studies and analysis by donor bodies and to improve overall co-ordination. It would also collect data on a regular basis and develop long and medium term planning forecasts. To be established in January 2005.

Timescale for SMD

The latest CEER paper envisages a phased approach in three steps "During the first phase, ending in December 2005, the legislative, regulatory and technical rules for the development of each national market in the SEE region will be concluded... During the second phase, ending in December 2007, the regional aspects of the market, such as investments of a regional nature and their guarantees, standard market design for the regional market, regional licensing, regional scheduling and trading facilitation mechanisms, are envisaged. The third phase, starting from January 2008, is the actual, real-time operation of the Integrated SEE regional energy market."

⁴ "Discussion Paper on the South East European Regulators Board for Electricity and Gas", CEER, Dec 16, 2004



3.7 European Commission proposals

The development of the REM is closely linked to the Stabilisation and Association Process launched by the European Union in 1999 and to the Stabilisation and Association Agreements signed between the EC and each of the jurisdictions/states. Key aspects of the process include: the approximation of policies; fair, transparent and non-discriminatory third party access; establishment of common rules for generation, transmission and distribution; compliance with the IME Directive; and establishment of independent national regulators.

In 2002 the EC published a Strategy Paper setting out the requirements for a SEE regional electricity market. This Strategy Paper and the Stabilisation and Association Process formed the basis of the Athens MOU signed at the end of 2002.

The stated objective of the signatories to the MOU was to “establish an integrated regional electricity market in South East Europe by 2005 and ensure its integration into the European Union’s Internal Electricity Market... based on the principles set out in the Electricity Directive”. Under the MOU 2002, and the subsequent MOU 2003, the role of the EC includes acting as an impartial secretariat, monitoring and overseeing the reforms, donor co-ordination, and preparing annual benchmarking reports and implementation programmes.

In its recent discussion and consultation notes on the REM⁵, the EC recommends that the overall approach in the establishment of a REM should include: establishment of a strong national regulator; co-operation and coordination of investment policies; tariff reform; and the prioritisation of consideration of environmental issues. The EC also recommends the following interim institutions:

- A Ministerial Council, a Permanent High Level Group and a Forum for the discussion of issues, with the Forum to be put on a legally sound basis and given executive powers;
- A SEE Regulators’ Board for electricity and gas (building on the draft Tirana Declaration) to oversee and monitor the operation of the market and have limited adjudication powers;
- Technical committees to ensure reliable operation of the market; and
- A Secretariat to monitor implementation of the commitments and to prepare meetings.

The EC also recommends that the development towards a Full REM take place in two phases. Each phase is to be divided into a number of stages, in order of priority.

⁵ The Athens Forum June 2004 Discussion and Consultation Note and the Athens Forum October 2004 discussion and Consultation Note. Note that these notes and other discussion and consultation documents referred to in this section are not binding on the EC.



Preconditions to Phase 1 are that all parties stamp out trading abuses, corruption and non-commercial arrangements (as parties have committed to do under the Athens 2003 Memorandum) and that parties develop energy statistics on a state basis.

Phase 1: present - December 2005:

- Stage 1: Payments reform.
- Stage 2: Distribution company consolidation.
- Stage 3: Investment in generation and interconnection.
- Stage 4: Create incentives to develop reasonable levels of reserve generation capacity.
- Stage 5: Appoint lead co-ordinator to create mechanisms for implementation of compatible national and regional market designs; development of statistics and energy information.
- In addition:
 - Regulators should be made more independent, having operational autonomy but also democratic accountability;
 - All necessary regulatory and legal rules should be established, in accordance with the terms of the two Athens memoranda;
 - The states should actively promote transmission and distribution system unbundling; where there is no legal divestment, the holding company should demonstrate independence;
 - All remaining customs and other duties on energy products should be abolished;
 - All information and interface protocols should be in place to allow customer switching and billing;
 - Grid Codes and technical protocols should be established. The EC suggests that organisations such as UCTE, CEER and ETSO should assist with this.

Phase 2: December 2005 – January 2008:

At this stage, the institutions of the regional market should have a legal basis and some operating experience. The necessary steps in this phase are:

- Regionalisation of investment.
- Pre – and post – investment guarantees – as derived from World Trade Organisation rules.
- Possible adoption of a single market design.



- Creation of a functioning contract exchange – acting as a clearing mechanism in addition.
- License harmonisation and mutual recognition.
- Day-ahead markets and regional markets.

The EC has also raised concerns in relation to environmental issues and improvements in energy efficiency which it views as important considerations during market reform.

The EC is aiming for the following objectives to be achieved in relation to each national market:

- Establishment of Phase 1 by December 2005.
- Establishment of Phase 2 by January 2008.
- Legal separation of generation, transmission, distribution and supply.
- Free third party access to transmission and distribution grids.
- Establishment of competitive markets in generation and supply to eligible customers.

The EC envisages a competitive wholesale market based largely on bilateral contracts with a balancing mechanism conducive to new suppliers and market rules that allow the creation of a non-discriminative competitive market. However, during the transitional phase the EC has expressed agreement with CEER's proposal for each jurisdiction to designate a regulated retail tariff segment (residential and small businesses) and an eligible customer segment.



4 Practical Steps for Jurisdictions to Undertake for an Initial REM

4.1 Introduction

In this section we describe the key preconditions for the effective implementation of an Initial REM and the underlying assumptions made by the Consortium. We follow this by outlining the practical steps that each jurisdiction should take to achieve implementation.

In the Initial Proposals, we divided the practical steps into the four areas of operational/technical, institutional, legal and market/commercial. In practice, there is considerable overlap between these areas. In these Final Proposals, we focus on the steps themselves, and consider the operational/technical, institutional, legal and market/commercial issues together.

4.2 Overview of an Initial REM

An Initial REM must build upon the existing trading that occurs within the region. The majority of trades are made between incumbent utilities, although there are a number of independent traders operating. These trades do achieve some of the benefits of an Initial REM, but the wider benefits of a market will not be realised until a wider range of electricity market participants can take advantage of the ability to undertake imports or exports with participants in other jurisdictions in the region. This means that an Initial REM requires:

- Generators with the right and ability to trade electricity, by means of bilateral contracts, with other generators, suppliers or eligible consumers in their own or another jurisdiction within the Initial REM;
- Suppliers with the right to buy, by means of bilateral contracts, from generators and other suppliers in their own or another jurisdiction within the Initial REM;
- Eligible customers (i.e. those who are permitted to self-supply) with the right to sell surplus electricity to generators or suppliers, or to buy top-up electricity from generators or other suppliers, in their own or another jurisdiction within the Initial REM; and
- Traders, who may also be generators, suppliers or customers, with the right to purchase and sell electricity to generators and suppliers in each jurisdiction within the Initial REM.

TSOs are assumed to be a party to the REM to recognise the interaction between the technical and commercial rules of the market.

Supply to regulated customers will be restricted to the incumbent utility in a jurisdiction, which may have an obligation to purchase some (or all) electricity from the incumbent generator. Typically, such an arrangement would reduce over time, as the eligible market grows and as more competition in generation is introduced into the national market. Within each jurisdiction, there are views on security of supply, public service obligations, privatisation, environmental development and consumer protection requirements. For an Initial REM, a policy that recognises the valid differences between the member participants will be required.



4.3 Assumptions underlying an Initial REM

In determining the minimum requirements for an Initial REM, the Consortium has made a number of assumptions. However, we consider that it is possible for these requirements to be exceeded in one or more jurisdictions, which could result in the Initial REM having additional elements of complexity for those jurisdictions. These additional elements could include a full day-ahead market, depending on the level of market sophistication. The interface between the different jurisdictions could be dealt with through specific terms in bilateral contracts.

- *Market opening is required for regional trading only:* As a minimum, the bilateral contracts permitted within each jurisdiction must allow for trading across an interconnector. The ability to enter into contracts for the sale or purchase of electricity within a jurisdiction is not strictly necessary to enable an Initial REM to be implemented. However, it is an important aspect of market opening and is likely to bring added benefits, so we have included it within our regional trading requirement.
- *No specific regional ancillary services market is required:* We have assumed that an Initial REM does not require a specific market for the provision of ancillary service, Specific provisions for trading of ancillary services across interconnectors would be difficult to achieve for an Initial REM although we anticipate they will be added as part of the natural development of the market. Each jurisdiction will require a means of procuring ancillary services to maintain its own system stability, which should build upon current practices. At its simplest level, the provision of ancillary services could be made an obligation on the relevant connected parties. The cost of providing these services could then be classed as “a cost of doing business”.
- *Governance issues are consistent across all jurisdictions:* We differentiate between policy, regulatory and market operations governance in relation to an Initial REM.
 - *The setting up of a State Energy Authority:* Although the Athens MoU requires the creation of a State Energy Authority in addition to an Energy Regulatory Authority and TSO, we consider that a State Energy Authority is not essential for the Initial REM. However, the critical strategic and policy issues which involvement in a REM imply require intervention from Ministerial level, and can impact adversely on the smooth operation of the REM when conflicting policy decisions are issued. The competence of the State Energy Authority to make and clearly issue these policy decisions can benefit the market. In some jurisdictions, this role is currently undertaken by the energy ministry in some jurisdictions and may continue during the implementation of the Initial REM;
 - *Regulatory governance:* We assume that regulatory governance will be adopted, to ensure effective functioning of both the REM and national markets. This includes a clear separation of powers between the Regulator and the State Energy Authority, public accountability of the Regulator, particularly in decision-making, and the allocation of responsibility for dispute resolution and enforcement of decisions to the Regulator. These conditions are not listed in the IME, as they tend to be part of the administrative or constitutional law of most jurisdictions. These steps will in some cases be considered to be automatic by some market participants. They can have a considerable impact on the market,



for example intervention by the State Energy Authority in the decisions of the Regulator, or the inability of the Regulator to enforce its decisions, will affect the value of the Regulator's decisions. This can undermine faith in the Regulator which will impact the market. In some cases national interests may require the interference of government in market operation, for example, the British Government's subsidy of the nuclear generator British Energy in 2001 to avoid bankruptcy and the closure of a strategically important part of the UK generation fleet. However, this should be kept to a minimum in order to assure market participants of effective operation of the market, without undue interference by Governments;

- *Market Operations Governance:* There will need to be clear rules governing the interrelationship between the Market Operator and the market participants and between the market participants themselves. The framework of market rules should be clear and non-discriminatory and operate in a transparent way. We would expect these rules to cover effectively the "membership" rules for the market, including laying down minimum requirements for joining the market (including financial status), the minimum level of acceptable market behaviour and the rules for withdrawing membership from a defaulting participant. As these types of rules are fundamental to being able to do business in the market, we would expect a clear statement of the governance requirements for the setting, administration and changing of these rules. We would also expect market governance to address the issue of market power and potential abuse of market power. A programme needs to be put in place to develop a regional market monitoring scheme.
- *Agreed methodology for the allocation of hydro risk:* The value of water and who takes the risk of hydrological conditions and its impact on scheduling and delivery (or more pertinently non-delivery) is a key issue for the REM, but for the Initial REM it is only required that the differences between countries do not cause market distortions in the short term. The costs of non-delivery of contracted hydro volumes must be clearly allocated to the appropriate parties in accordance with widely accepted principles, even if they are not uniform across all countries.

4.4 Preconditions for an Initial REM

Discussions in the Athens Process reflect a clear understanding within the European Commission, the region and the international donor community that the implementation of the REM requires liberalisation of national markets to create the minimum conditions for an effective regional trading mechanism to be implemented. The liberalisation process in the national electricity sectors in the region seeks to implement EC directives relating to the internal market in electricity, particularly Directive 1996/92/EC and its successor Directive 2003/54/EC. This liberalisation effort operates within a much wider legal framework involving competition rules, state aid, customs duties and capacity building within key public institutions, such as an independent regulator and an effective judicial process. For an effective Initial REM, it is necessary that a number of preconditions are met or established within the legal, regulatory, market and technical frameworks in each jurisdiction.

The following preconditions are in place in all jurisdictions, or are in the final stages of being established, in accordance with requirements set out in national legislation:



- *Independent TSOs:* National independent TSOs are being established, primarily to provide transparent and non-discriminatory third party access to the system. In some jurisdictions, an ISO is proposed. It is important that the transmission system is operated by a system operator either structurally or functionally independent of the incumbent utility and other Initial REM participants. However, further strengthening of capability is required for an effective REM to be established e.g. in settlement and in communications procedures, and the unbundling process must be finalised.
- *Independent Regulator:* National independent regulators have been established, primarily to regulate effective, non-discriminatory third party access and to determine transparent and non-discriminatory transmission tariffs applicable to the REM. Many of their responsibilities interface with a REM, but further strengthening of capability is required eg in the areas of reviewing and amending tariffs and of market monitoring.

In addition, the following preconditions should be put in place to enable an effective REM. Some of these are in place in some jurisdictions, while others have been partially implemented and need strengthening. Others are still required throughout the region:

- *Cross border trading procedures:* The CBT mechanism is in place, and is to be further developed over the first half of 2005. However, not all jurisdictions participate and there needs to be further clarity over trading with external parties. Since CBT is at the heart of the REM (both Initial and Full), it is important that consistent and non-discriminatory sets of procedures are documented and agreed by all participants. Whilst CBT is currently restricted to TSOs, under a REM, CBT must be open to other parties (e.g. through the sale of interconnector capacity rights).
- *Third party access:* National legal and regulatory frameworks grant market participants rights of access to the national electricity systems on non-discriminatory terms for the purpose of trading electricity, and should also cover rights of access to interconnectors for regional trade. Both technical and commercial requirements for connection and use-of-system should be specified and documented, within national Grid Codes, with clear cross-references to the regional Grid Code. We recognise the practical requirement for establishing effective TPA, which will be one of the restrictions on the scale of the Initial REM.
- *Freedom to contract:* National legal frameworks must allow participants to conclude sale and purchase of power contracts with participants other than the incumbent utility. Eligibility criteria for the REM will need to be agreed and any reciprocity issues due to differential treatment in different legal frameworks resolved.
- *Participant registration:* A set of consistent and transparent methods and standards for the registration of participants in a REM will need to be drafted and agreed. These should be legally acceptable in all national markets, such that a participant that is eligible to participate in the REM should also be able to participate in each national market. Registration should require a participant to be in possession of a relevant licence (which for the Initial REM would be issued by national regulators) allowing it to trade at a regional level. A mechanism should be put in place for mutual recognition of licences between jurisdictions.



- *Agreed scheduling principles:* The principles for scheduling of physical flows across the interconnector need to be agreed between the adjacent TSOs. Given the impact flows across one interconnector can have on other interconnectors in the region, the principles must be consistent for all interconnectors in the REM.
- *Interconnector capacity allocation:* A transparent and non-discriminatory means of allowing participants to secure interconnector capacity and to manage congestion will need to be implemented. It is important for effective operation of an Initial REM that this method is consistent for both directions of interconnector flow. In particular, procedures will be required to deal with existing long-term contracts including a means by which the capacity returns to the market over time. This precondition is one where more advanced methods are likely for a Full REM. In addition the re-allocation of interconnector capacity secured but not used on the day, and compensation for capacity secured but not available on the day should also be addressed in order to better utilise scarce capacity and encourage the most efficient use of it. Co-ordinated capacity auctions are the end-objective, reflecting the need to have a transparent and competitive process. Initially, capacity allocation could be implicit (if a zonal REM is developed) or pro-rated on existing allocations, transitioning over time to a fully functioning capacity auction.
- *Transmission and interconnector pricing:* For the Initial REM, a methodology that is consistent with those being developed at national level is required, which also complies with EC regulations. It is important that the pricing signals contain a locational element to encourage efficient use of existing transmission and interconnector capacity.
- *Common treatment of contractual flows and deviations:* A common method of determining the contractual interconnector flows (as distinct from physical flows) will need to be agreed, covering nominations, planned and actual flows, and losses. Although this may not appear a priority where there is no congestion (with congestion there is the potential need to curtail agreed commercial interchanges), it is important that the Initial REM has a process for dealing with potential changes once the market is in place and prior to competition in generation being established. Such methods could be documented in a multilateral document or agreement that could form the basis of the rules for the Initial REM. This could involve the regulated supplier (i.e. the current incumbent utility in each jurisdiction) acting as the balancing supplier or generator. This is the principle that has been adopted in Ireland, where ESB (the vertically integrated utility) buys “spill” energy and sells “top-up” energy at a regulated price.
- *Dispute resolution process:* An agreed dispute resolution procedure to resolve disputes between participants will need to be put in place, with a mechanism to ensure that the decisions are binding on the parties to the dispute. Since participants are likely to be based in different jurisdictions, the dispute resolution process must be seen to be independent of national procedures, but enforceable in each jurisdiction. We would anticipate the regional regulator being involved in this process



4.5 Practical steps towards implementation

Over the past eighteen months, utilities, governments and regulators have taken many of the steps required towards implementation of a REM, but the extent to which jurisdictions have completed the process varies significantly. We have focused on defining the minimum level of change required such that all jurisdictions should be able to participate in an Initial REM. There will, however, be additional benefits gained if an Initial REM is more advanced. The final decision on the components to be included in an Initial REM will need to be taken in mid-2005, when the progress of the jurisdictions can be monitored.

We believe that steps are required in the following areas, to varying degrees across the jurisdictions:

Development of legal frameworks

Some national legal frameworks for the electricity sector require further development to ensure that the rights and duties of the participants and institutions in relation to their participation in the Initial REM have a firm statutory basis.

Institutional strengthening

TSO: Further development within the TSOs will be required to ensure the organisations have sufficient capability to take on a central role in an Initial REM. In particular, development will need to focus upon:

- *Schedule and dispatch of generation:* TSOs will need improved SCADA/EMS systems to provide better opportunities for optimisation of generation. The extent to which such facilities are in place will be one of the determinants of the scale and scope of an Initial REM.
- *Facilitation of market operation, inter-country trades, management of congestion, information exchange between dispatch centres and communications with market participants.* This will require development of national Grid Codes which will be complementary to the regional Grid code being developed by EdF. The key requirement is to ensure that the technical rules and conditions for access to the transmission systems and interconnectors are transparent, objective, published and enforced by the regulator.
- *Long term system and interconnection planning.* Currently proposals are made on the basis of operational problems without any consideration of market value. The introduction of congestion charging will require a more comprehensive analysis of reinforcement justifications.

Development of a Market Operator (MO) capability: In most jurisdictions, our understanding is that the MO will form part of the TSO. The national MO will need to liaise with the TSO and possibly with the regional MO. We believe that national MO roles and responsibilities need to be more clearly defined, and the systems and procedures to support operation are not yet fully developed, requiring institutional strengthening. We would expect the MO to perform both an operational and an administrative role in the national market.



Independent regulator: National regulators will require training and guidance as they take on more of the powers and functions specified in the IME Directive. In particular, regulators should be given support on connection and Use of System methodologies and tariff-setting, on the roles and responsibilities of those providing balancing services and ensuring that the rules on the management and allocation of interconnector capacity are effective and non-discriminatory. In most jurisdictions, the regulator is the body responsible for approval of the national Grid Code (drafted by the TSO); appropriate training to ensure they can carry out such a role is important, both for the national market development and for the REM.

Utilities: Additional training will be required for all utilities to improve their understanding of the implications of participation in the market, commercial roles, and the impact of technical operations on the market.

Development of market support systems

Development of standard bilateral contracts: A bilateral contract in the Initial REM must be valid in each of the jurisdictions participating in the market. It must also give participants the incentive to sell or purchase electricity from a participant in another jurisdiction, whilst remaining non-discriminatory. Our view is that the form of bilateral contract should be based on standard contracts used elsewhere in Europe, to increase tradeability, ease the transition to exchange-based trading as a Full REM is developed and to allow the maximum number of traders to participate in the market.

Development of settlement systems and procedures: A settlements system will need to be implemented. This may be done by individual utilities, or by a central organisation. If carried out by individual utilities (as is most likely for the Initial REM), a common process should be agreed and made transparent and verifiable. For an Initial REM, we believe that settlement should be made as simple as possible, to minimise the requirements for additional computer software development and communications equipment. It should be considered as a transitional system, which will require replacement when the Full REM is implemented.

Development of transmission tariffs: In addition to the cross-border element of transmission tariffs of specific concern to the TSOs hosting the flows, participants will need to know the cost of their proposed connection and use of the system charges for the purposes of importing or exporting their power needs through bilateral contracts. Such transmission tariffs will need to be non-discriminatory, transparent and published to ensure that participants can plan and cost their participation in the REM. They should be regulated on a basis that encourages investment and creates incentives for efficiency and good quality of service. Most regulators are working on methodologies with the objective of defining initial tariffs during 2005.

Development of REM rules

Development of initial REM rules: There are a number of minimum electricity market rules that will need to be adopted, but these will be considerably less than the rules needed to define a fully operational national market. The rules will need to be consistent with the relevant legislation but could be enforced by means of commercial agreements between the participants that wish to be involved in trading (save that the network owner/operators would need to be a party to these agreements and the agreements would need to be subject to regulatory oversight). In particular the REM rules should cover:



- *Participant accession and registration:* The conditions for an organisation to become a participant and for its participation to be registered, together with a central body charged with overseeing this process (assumed to be the MO). The criteria and conditions for access to the REM will need to be set out. The rules will also need to cover the conditions under which a participant can leave the market, or be removed from market participation. Key provisions are the deposit or security requirements. There may also need to be specific rights and obligations that flow from participation, such as to abide by national and regional market rules, to abide by decisions of bodies established pursuant to the REM and to comply with instructions from relevant TSOs.
- *Confidentiality:* Rights and obligations on provision of information and confidentiality obligations in relation to specified information must be included in rules developed for the market.
- *Supply of information:* The rules need to contain clear procedures for the exchange of real time data and commercial metering values. All parties must supply sufficient technical information on their systems to enable other parties to plan and operate their respective systems effectively. There need to be agreements in place on the type of information, detail, frequency and method of transfer. The rules will also need to deal with the question of how much market operational and pricing information will be released to participants, potential participants and other interested parties.
- *Interconnector access:* Rules must be consistent for both ends of the interconnector and for either imports or exports. For the Initial REM, there may be differences in access rights across jurisdictions. In cases where access is restricted, a timescale over which restrictions will be relaxed should be specified.
- *Contracting procedures:* The rules need to define the way in which, and the place where, contractually agreed flows across an interconnector (between parties at either end of the interconnector) are recorded.
- *Settlement of contracts:* The rules for settlement should be specified. There will be times when the contractual flows cannot be achieved and that the actual contractual position needs adjustment or correction. Rules need to be in place to define the way in which these adjustments are priced in a transparent and non-discriminatory way and to ensure that the relevant participants are informed. This will also need to cover the way in which mismatches between expected and achieved contractual flows are handled, and paid for, in the market.
- *Disputes:* There will need to be an agreed way of handling disputes, which may involve participants in different legal jurisdictions at both ends of the interconnector. The dispute resolution process could, as a commercial issue, be dealt with in the bilateral contracts and any multilateral documents covering access to the interconnector.
- *Losses and errors:* Calculation, allocation and pricing of losses and errors across interconnectors should be addressed, including the ability to net flows across the interconnectors and compensation to be paid to national TSOs for costs incurred as a result of hosting transit flows of electricity (“wheeling”).



- *Outage co-ordination:* Provisions to deal with maintenance and outages of interconnector circuits are necessary. If jurisdictions are to co-ordinate outages to minimise congestion, formal procedures should be specified.
- *Amendments:* A process for amendments to market rules, including governance, needs to be provided.

4.6 Critical tasks for successful implementation

The institutional and procedural actions necessary for implementing an Initial REM have been described above. Putting all of these elements into place is, however, only one step in the process of implementing a market. The effort involved in giving effect to the principles should not be underestimated. The four areas highlighted below are those we consider critical to a successful implementation of a regional electricity market in the region.

- *Appointment or recruitment and training of staff to operate the market* (both in the TSO and MO functions). Such activities are ongoing in the majority of the jurisdictions. There appears to be a shortage of qualified technical staff, staff skills and training. These are essential for successful reform of utility and market operation and the issue must be urgently addressed;
- *Design and implementation of the various IT systems* that will be required to operate the market, including upgrading of many of the SCADA/EMS systems. In our view, the critical issue here is appropriate design of the systems, such that they can either be extended to cope with additional market complexity or can be implemented in a simple manner without incurring excessive costs;
- *Preparation of the written procedures* necessary to ensure that the market is operated effectively, and ensuring that there is consistency between market documentation in each jurisdiction and Initial REM documentation. There will also need to be clear rules on the precedence amongst the different documentation – between the Grid Code and the rules and between regional (including UCTE) and national operating procedures;
- *Third party access:* This needs to be established and all necessary requirements for ensuring that the access is open, transparent and non-discriminatory, including technical rules and tariffs, need to be established; and
- *A plan leading to the go-live date,* that allows for parallel running of the new systems and procedures alongside existing operations, that recognises the need for last-minute amendments to deal with the resolution of practical issues and that gives confidence to participants, governments and regulators that the implementation will be successful.



5 Full REM

5.1 The differences between an Initial REM and a Full REM

We highlight four characteristics of the Full REM below which constitute the key differences between an Initial REM and a Full REM. These characteristics underlie our proposals. These characteristics require more complex methodologies to be agreed between the participating jurisdictions, a higher standard of technical operational capabilities and more complex IT systems as support. The extent of the differences may vary between jurisdictions, depending on the stage of development of each national electricity market. For example, the market in Romania is more advanced than those in the CARDS countries, and may be more in line with the requirements of a Full REM.

- *SEE Market Operator*: We assume that a Full REM would require a SEEMO to carry out the necessary cross-border co-ordination activities (e.g. day-ahead market, communication and settlement, etc.)
- *Day-ahead market (DAM)*: We assume that a Full REM would operate a DAM across the region. The SEEMO would publish results and then liaise with TSOs over balancing requirements. A regional DAM would not, however, necessarily imply a single market price across the region. It is not required that the market operator would become the power exchange operator, but should provide the information to facilitate the establishment of such exchanges., Although it is possible that the SEEMO could operate a power exchange for the REM, it would nevertheless be required to liaise with power exchange operators for balancing purposes.
- *Number of participants and associated contracts*: We assume that there will be a significant increase in the number of bilateral contracts entered into through the SEEMO or other market intermediary. Within the Initial REM, the number of bilateral contracts is likely to be limited by the number of eligible participants, access to interconnectors and the capability of the TSOs' settlement software. In the Full REM, there is likely to be a wider range of contracts on offer, an increased understanding of the benefits of trading, improved trading capabilities within the participants and more participants.
- *Mechanism for capacity support*: The CEER proposal for Standard Market Design has proposed a generation capacity support mechanism. The mechanism would require periodical capacity adequacy studies and regulated suppliers to hold both capacity and energy contracts.
 - The World Bank Framework for Development of Regional Energy Trade in South East Europe published in March 2004 considers that the untested REM market rules, regulatory rules and participant creditworthiness heighten investor risk and is likely to require an investment support mechanism to maintain adequate reserve margins.
 - In addition, our own experience has found that capacity support mechanisms are critical when attracting private investment is a key driver of reform. As a minimum requirement to enable trade, a capacity mechanism is not required. Rather, it is a medium to long term REM requirement. The issue that is



important is to ensure that any proposals are transparent and appropriate, such that no distortions are introduced to the market.

- The adoption of a capacity support mechanism on its own may still prove inadequate to attract future investment in generation. It may be necessary for the Tendering option described in Article 7 of the EC Directive 2003/54. Consideration may need to be given to some co-ordination in the application of this option across the states.

5.2 The main features of a Full REM

The Full REM is assumed to be a full bilateral contracts market with a voluntary day-ahead market and with market-based balancing prices. It may include a separate market for ancillary services and may offer financial contracts through brokers and/or power exchanges. Finalising and accepting the Full REM (and the details of the SMD principles) in each jurisdiction will inevitably lead to modifications of the Initial REM rules and technical documentation, including the Grid Code. We understand that the ECSEE Treaty is likely to provide a legal basis for establishment for some of the regional REM institutions.

- Although the SMD principles do not specifically address locational marginal pricing or zonal pricing, the implications of market pricing and their relationship to tariffs will need to be considered to ensure there are no perverse incentives. We believe a regional study into zonal pricing is required once more details of the Full REM are clarified, and each jurisdiction has established well-defined tariffs.
- The management of a Full REM requires detailed Grid Codes that are mandatory within each jurisdiction, and which describe the obligations and responsibilities of each party involved in the generation, transmission and distribution of electricity, as well as the interfaces between the national and regional markets. National Grid Codes should focus on national markets and cross-refer to the regional Grid Code so that it is clear which document takes precedence in any situation. In general terms, we would expect the national Grid Code to take precedence in relation to operational matters.
- There will need to be co-ordination between the development of the regional Grid Code and the regional market rules to ensure that new aspects of the market are fully captured in the relevant documentation in a consistent manner. In particular, this will apply to the procurement of ancillary services. There will be a need to develop ancillary services pricing principles, standard ancillary services contracts and contract delivery monitoring. Given that ancillary services contracts may differ between jurisdictions, it will be important for the regional ancillary services contracts to be consistent with contract principles throughout the region. In the longer term, there may also be the option of a regional ancillary services market. The practical impact will be that TSOs will need to develop agreements specifying commercial rules to procure:
 - operating reserve and frequency control, with rules over and above the UCTE handbook rules;
 - voltage and reactive power control, where common rules need to be developed for both steady state and unplanned outage conditions, products such as



reactive power reserves need to be developed and services need to be valued; and

- black start, where the plans of individual utilities need to be co-ordinated to achieve minimum down time in the event of an incident.

- We have assumed that a regional TSO would exist in an advisory capacity only. Although the replacement of national TSOs by a regional TSO may be the long-term optimal solution, avoiding unnecessary duplication, this is not practical for implementation in the time frame of the Full REM and is not considered further. We assume that the regional TSO will have only a limited, advisory role in the Full REM, but believe that there are institution-building steps that need to be undertaken now to ensure that the regional TSO will be operational for the end of 2007. Most importantly, the level of operational, technical, commercial and regulated interface with national TSOs must be clearly documented and codified in secondary legislation or regulations in each jurisdiction. Other practical implementation steps include funding, ownership, location, agreed scope, role, responsibilities and mandate. An effective way of ensuring appropriate relations between the national TSOs and regional TSO may be by way of inter-governmental agreement or treaty, ratified in all jurisdictions. The PHLG and SETSO working groups are progressing the definition of the role and form of the Regional TSO and our proposed implementation plan is not intended to prejudice in any way the work of those bodies, but instead highlight the areas which will need to be addressed by each jurisdiction regardless of the final agreed form of the Regional TSO. We also note that the final form of the regional TSO in the Full REM is not yet decided, and consider that a review of the operations of the TSOs under the initial REM would be a prerequisite to agreeing their final forms.

- We have assumed that a regional regulator would provide a co-ordination role and undertake specific regulatory tasks associated with the Full REM, including facilitation of a regional dispute resolution process, enforcement of participation rights (which may require one jurisdiction to recognise a licence granted to an entity in another jurisdiction), market monitoring and assessment of the functionality of the market. The market understanding granted to the regional regulator means that it will be well placed to recommend potential changes to the REM that would bring added benefits. We do not envisage, even in the long term, that a regional regulator would override national regulatory decisions or mandates. Since the role of the national regulators is to protect and preserve customer interests in individual jurisdictions their roles are necessarily national in focus.. As with the regional TSO, there are institution-building steps that should be undertaken now. These include the documentation and codification of co-ordination requirements in secondary legislation or regulations in each country, and practical matters of funding, staffing (both by permanent appointment and, perhaps, by secondment), location, agreed scope, role, responsibilities and mandate.

- A Full REM will require full harmonisation of the market rules of each jurisdiction to ensure that the interface between the markets is smooth and avoids unnecessary complexity. The important feature to be borne in mind during the design, development and implementation of each individual market is that they should be consistent with the principles of the SMD. The objective of market rules for a Full REM is not to



overturn the rules for individual markets but to deal with the interfaces between the markets and overarching regional issues. This may include agreeing common standards for the transfer of data, such as is in use in the USA - OASIS (Open Access Same-Time Information System). Similarly, it is likely to be necessary to agree consistent approaches for the settings of tariffs, and transparency in the costs that are included in different tariffs. Tariffs should allow full cost recovery, and any cross-subsidies should be imposed outside the REM. The REM will operate most efficiently through achieving cost reflective tariffs that relay clear signals to the market. By this time, there should be consistency between licences in different jurisdictions such that the regulatory treatment of a generator in one jurisdiction is comparable to that in other REM jurisdictions.

- In implementing the SMD a number of aspects of the regulatory regimes of each of the countries will need to be considered to ensure that they align with the key elements of the SMD. One central aspect of the regulatory regime which will need to be considered alongside the development of the SMD proposals is the national licensing regime. The CEER Discussion Paper “Toward an Action Plan for the Implementation of a SEEREM Design” identifies the need to harmonise licensing procedures. In its Discussion and Consultation Note on the REM (June 2004) the European Commission suggests that the harmonisation process could begin post 2005. From the perspective of regional trading, the licensing regime should not form a barrier to participation in the Full REM.

Our assumption in these proposals is that a Full REM based upon the SMD proposals could be targeted for implementation in 2008.

5.3 Initiatives that need to accompany a Full REM

Alongside the development of a Full REM is the requirement for customer tariff reform. If tariffs within each jurisdiction are not cost-reflective, then it is difficult for participants to play a full role in the REM. It may be necessary for some jurisdictions to limit their participation in a REM, to reduce the risk of exposure to full market costs that are higher than potential revenues to be achieved. This is an issue in many of the jurisdictions that have reported tariffs to be below cost and highlighted cross-subsidies between different categories of consumer. Many governments are currently developing policies and methodologies to move towards cost-reflective tariffs within the electricity sector, retaining subsidies as a social policy initiative. It will be important to review progress towards these objectives as the REM develops, to ensure that each jurisdiction is able to participate fully in the market. In addition, in order to ensure the effectiveness of the Full REM, it is important for jurisdictions to focus on increasing recovery rates and reducing both technical and non-technical losses.



6 Other jurisdictions participating in the REM

6.1 Introduction

The REM will not be restricted to the CARDS jurisdictions, but will also involve some EU Member States (e.g. Greece, Italy, Slovenia) and other EU accession states (e.g. Romania and Bulgaria). There are significant differences between the electricity markets in the EU Member States and those in the CARDS jurisdictions, whilst those of Romania and Bulgaria fall between the two. In considering the steps required to implement both an Initial REM and a Full REM, the Consortium has taken into account the developments in these neighbouring markets.

6.2 The current position in the electricity sector in Romania

We have considered the current state of the electricity sector in Romania taking into account the requirements necessary to participate in the REM and other issues such as unbundling of the vertically integrated utility and the treatment of various generation issues including hydro risk and capacity support mechanism.

- *Transmission System Operator:* Transelectrica, the transmission company, owns and operates the Romanian power system, and has a subsidiary, OPCOM, which acts as market operator and administers the market.
- *Independent regulator:* The autonomous regulator in Romania is the Romanian Heat and Electricity Authority (ANRE), established in 1999, which is independent of industry and government. ANRE is responsible for licensing electricity transmission, generation, distribution and supply.
- *Market structure:* The wholesale electricity market in Romania is divided into a competitive market and a regulated market. The competitive market consists of bilateral contracts with a day-ahead spot market to deal with discrepancies between actual and contracted amounts. Most trade is by way of bilateral contracts, in order to limit exposure to the day-ahead market price. It is intended that in 2005 a new market structure (the New Trading Platform), consisting of a bilateral contract market with a voluntary day-ahead exchange, will be instituted. Under this New Trading Platform generators will self-schedule, although there will be specific mechanisms for priority producers (renewables and cogeneration) and ancillary services will be traded competitively.
- *Eligible customers:* The criteria to become an eligible customer is currently a combination of annual consumption (over 1 GWh) and creditworthiness. Fifty five percent of the electricity market is competitive, with 35 eligible consumers electing to switch supplier. ANRE publishes on its website a list of eligible customers. By the end of 2007, it is intended that the market will be fully competitive, in line with the IME Directive.
- *Third party access:* Third party access to networks by users is guaranteed in the legislation. An exception is made where the available technology for the connection would entail excessive cost to the operator. The "Regulation regarding users' connection to public electricity networks", which entered into force in December 2003



introduced a regulated connection tariff, intended to facilitate access to the networks. ANRE has subsequently prepared tariff methodologies for access prices and plans to apply a price basket approach to distribution networks and a revenue cap approach to transmission networks, commencing in January 2005.

- *Allocation of interconnector capacity:* Transelectrica currently allocates capacity on the interconnector in a non-discriminatory manner. From 2005 interconnector capacity will be allocated in daily, weekly, monthly and annual auctions which will be described in the new commercial code. Any unused capacity remaining after the longer period auctions will be allocated on a daily basis.
- *CBT:* Romania is a participant in the CBT and Transelectrica was involved in the development of the trade methodology.
- *Unbundling:* The previously integrated utility (CONEL) was unbundled into three generation companies, one transmission company and one distribution company. Electrica was established as the single distribution company in Romania. The government continued the unbundling process and created eight regional subsidiaries. Two distribution companies have been privatised and will be taken over by the Italian company ENEL pursuant to an agreement signed on 20 July 2004. ENEL is prevented from increasing tariffs by more than 4.5% per year during the first three years after privatisation.
- *Generation issues:* Romania has an excess of installed capacity over demand and is therefore a net exporter of electricity. Hydro generators bid into the market on the same basis as other generators; there are no specific provisions for dealing with the issue of hydro risk in the law. In addition, there is no provision for capacity supports for generators or other support mechanisms, although studies on the subject continue.

6.3 Current position in the electricity industry in Bulgaria

We have also reviewed the current state of the electricity sector in Bulgaria with a similar focus:

- *TSO:* The National Electricity Company (“NEK EAD”) is the owner of the transmission system and is 100% state owned. The Energy Law requires the transmission and distribution system operators to be independent from activities not related to transmission or distribution, as of the date of accession to the EU. The National Dispatch Centre (“NDC”) is the system operator of NEK EAD which, in May 2003, became a full member of UCTE.
- *Independent Regulator:* The regulator in Bulgaria is the State Energy Regulatory Commission (“SERC”). SERC is an independent body financed by licensing fees and other fees, which has the ability to require information from any energy entity. SERC is responsible for issuing licences for generation, transmission, distribution, trade, organisation of the electricity market, and public supply of electricity. Until the market is opened completely the Regulator is given authority for establishing tariffs under which the public suppliers and consumers buy electricity, charges for transmission, and fees for connection to networks.



- *Market structure:* The new market, which replaces the single buyer market, established pursuant to the recent Energy Law 2003, provides for a bilateral contracts market and a balancing market. Over time a day-ahead market for short term trades and for ancillary services will be developed.
- *Eligible customers:* Eligible customers are permitted to negotiate with electricity producers directly and to choose their supplier. Eligible customers are currently those with a minimum annual consumption of 100GWh (15% of the market, 10 companies). In September 2004 the first contract for direct purchase of electricity was signed between an independent producer and a large metallurgical plant. It is expected that the market will be gradually opened, with the eligible customer threshold expected to be reduced to 40GWh in 2005. By the end of 2007 electricity supply will be fully liberalised.
- *Third party access:* The transmission and distribution companies are required to provide non-discriminatory access to third parties to their networks, and may only refuse such access where it would breach technical or safety rules or would prevent a service obligation to the public. Terms and conditions of access will be set out in secondary legislation.
- *Reciprocity:* The Energy Law provides for the liberalisation of the Bulgarian import and export market for electricity based on reciprocal treatment of Bulgarian entities within foreign jurisdictions. It is envisaged that over time generators, traders and suppliers will be permitted to conclude transactions with entities in EU Member States and in other jurisdictions with which Bulgaria has negotiated a treaty, based on the principle of reciprocity and provided that the generators, traders and suppliers of Bulgaria are given free access to the electricity market in the jurisdiction concerned.
- *Allocation of interconnector capacity:* Currently the public provider (NEK EAD) has exclusive authority to import and export electricity. NEK EAD recently signed two contracts for delivery of power to Western Europe through an intermediary, following resynchronisation of the two UCTE zones. Each contract is for 50MW, with one lot involving participating on European power exchanges and the other involving direct delivery of power to clients in Zone 1.
- *Transit:* The Regulator is not responsible for determining prices for the transit of electricity through the country.
- *Unbundling:* The distribution network in Bulgaria has been divided into seven distribution companies which are currently being privatised. The generation sector has been unbundled into eight private generators and a small number of district heating companies and site plants.
- *Tariffs:* The Energy Law provides for the phase out of subsidies to energy companies by 2005, as set out in the Energy Strategy. These subsidies will instead be directed towards low-income groups to assist them in the purchase of electricity at cost-reflective levels.



6.4 Participation in the REM by other jurisdictions

EC Member States

We consider that EC member states will be in a position to participate in both the Initial and the Full REM, given their required compliance with the IME Directive.

EC Accession States

In view of Romania and Bulgaria's more developed legal and regulatory frameworks as described above and their more advanced compliance with the requirements of the EC acquis, we consider both jurisdictions will be able to participate in the Initial REM structure outlined.

The Romanian Ministry responsible for energy has indicated that it does not see any impediment to Romania participating in the Initial REM and the Full REM and is looking forward to the prospect of regional trade, which it considers will benefit all jurisdictions involved.

The only issue that may arise in trade between Bulgaria and other REM members is that of reciprocity, particularly in relation to market opening. However, it may be that provided that Bulgarian entities are permitted to trade in the Initial REM then this is sufficient to fulfil the reciprocity requirement in Bulgaria's Energy Law, even if the level of market opening in the jurisdictions is not equal.

The current timetable for both Romania and Bulgaria to accede to the EC is 2007. As the timetable for the Full REM proposes an earliest implementation date at the end of 2007, both Romania and Bulgaria would participate in the Full REM as EC Member States.



7 Implementation plan

The tables that follow list the tasks we consider need to be undertaken to implement an Initial REM, followed by a Full REM in SEE. They highlight the timescale by which each task should be complete if the target dates of 1 January 2006 and 1 January 2008 are to be achieved for the Initial REM and Full REM respectively.

The tables show the status of each task, based on our understanding from the jurisdictions and other information. We have used a system of “traffic lights” to differentiate between the jurisdictions. We define each “traffic light” as follows:

- **GREEN:** The task has been completed (or is scheduled for completion in the very near future) and no further action required to achieve the necessary standard;
- **AMBER:** There is a programme in place with agreed funding and timing to achieve implementation of the task before the target date for the REM;
- **RED:** The task has been identified as being required but there is not a funded programme in place, or the task had not been identified as a priority for implementation. External support will be required if the target date for the REM is to be met.

For the Initial REM, we summarise the position for each jurisdiction in turn, highlighting any specific issues that need to be dealt with to ensure a consistent regional market.

For the Full REM, we have assumed that the steps we have outlined for the Initial REM will be in place by the start of 2006. The Full REM steps outlined cover both the regional bodies to be established and the existing national bodies created for the Initial REM.



8 Albania – Current position and plans

1. TSO/ISO

The Electricity Law was passed in May 2003 and came into force in July 2003. Subsequent action has resulted in the creation of a legally separate TSO within KESH. Currently, the TSO is largely dependent on KESH for undertaking its operations, and there are plans in place to ensure that the TSO can operate completely independently of KESH.

There is an asset separation plan currently in place to evaluate the assets. This was expected to be complete by October 04, but it is not clear if it is completed. After this study the asset transfer process can start and it is expected that this process will be complete by the start of 2005. The TSO will own both existing and new assets. Maintenance of these assets may still be performed by KESH.

We understand that there is no institution-building programme currently in place. This is delayed pending the outcome of the sector reform study (currently being undertaken).

Transmission system boundaries between the transmission system and the generation and distribution systems are well defined. Apart from codifying, no further action is required. There are some principles of a full set of planning procedures including data management, long term system planning, customer service, and procurement and performance of ancillary services already established but not yet formally codified. Likewise, the principles of a full set of operational procedures including Grid Code compliance, all operational capability, ancillary services provision and control, contingency planning, are in place due to custom and practice, but not formally written down or agreed.

Existing standards are mainly based on the UCTE Operational Handbook; planning standards are reported to be in preparation. A full set of standards needs to be completed. Net transfer capacities are published by ETSO seasonally.

A mini-SCADA system is being commissioned and is expected to be commissioned by mid-2005, with a full SCADA by end 2007. Technical

capability is acquired largely from external providers rather than in-house. Some RTU equipment is already installed in new substations.

2. MO

The Electricity Law does not require a separate Market Operator ("MO"). The MO is part of the TSO (known as the TSMO) and legally separate from KESH though within the KESH group of companies. All comments for the TSO above therefore apply to the MO. Ministry appointing consultants to carry out sector study in relation to market opening the results of which will be implemented by the Ministry and Regulator.

3. Independent Regulator

The Independent Regulator has been established pursuant to Electricity Law. ERE has been in place since 2001 and has a track record of actions and competency. ERE's responsibilities include issuing licences for transmission, generation, distribution, supply, export and import and construction of new generation capacity. To date ERE has issued licences to distribution and generation alone. ERE is also responsible for dispute resolution in the industry, settling disagreements between licence holders and consumers as well as between licence holders.

While a Grid Code is planned, ERE is awaiting the results of the EDF regional Grid Code to see if it can be adopted for Albania. This is due to be completed early 2005. A draft transmission tariff methodology proposed by Pierce Atwood is to be implemented in part during 2005 and applied in full by 2006.

4. Competition for eligible customers

Under the law customers using more than 100GWh per annum can apply to be designated as eligible. At present there is only one eligible customer, DARFO-Albania, a ferrochromium producer but its consumption covers multiple sites. Consideration is being given to lowering this threshold to perhaps 50GWh, which would make 5-6 customers eligible (about 5% of the market). The Electricity Law



envisages that the threshold will be lowered over time pursuant to market procedures. Switching procedures are not yet in place.

5. Third Party Access

Legislation currently provides for generators and suppliers to have access to networks. However, the transmission, distribution and metering codes are currently only in draft form, thus the ability of third parties to access the transmission and distribution grids, and especially interconnectors, is unclear. Albania is a full participant in the CBT mechanism.

6. Market Rules

The Electricity Law sets out the structure of the electricity market in Albania for the transitional period. The Albanian Transitional Market Model (TMM) is a hybrid of the Single Buyer model. It features regulated annual bilateral contracts between an initially small number of players, including Distribution Companies as eligible customers who will be permitted to purchase from their supplier of choice. A WB-funded study of Energy Sector reform commenced in September 2004 which will determine the optimum number of discos and gencos and look into the preferred form of contracts.

Transition to a regulated Third Party Access over 2-3 years is expected, as the institutional capacity of ERE and other players is increased. We understand the final market model has been designed by Pierce Atwood and ERE and was approved in August 2004. The transitional market will allow the permanent market to develop over time, when the necessary prerequisites are achieved, such as unbundling of KESH, establishment of a fully operational national dispatch centre, transparent and efficient flow of funds and account settling, market-orient import and export trades and a more accurate load forecasting process. Drafting of market rules is expected to be finished by the end of 2004. The results of the sector reform study are expected in May/June 05 and the final market structure will not be implemented until after this date.

7. Governance

National administrative or constitutional law will provide for enforcement of separation of tasks and responsibilities between the regulator and the Ministry. Legislation requires the regulator to report to Parliament annually and decisions of the regulator are published. The regulator is responsible for settling disputes between licence holders and consumers as well as between the licence holders. However the law only allows the regulator to request other government agencies (e.g. competition authority) to prosecute in cases of breach of rules, and does not allow it to influence security of supply or sector strategy.



Initial Regional Market Requirements to be fulfilled

		Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales	
1. TSO/ISO					
1.1	Legal & regulatory framework	G	<ol style="list-style-type: none"> 1. Legislation requiring or establishing legally or functionally separate TSO required. 2. TSO to be responsible for managing energy flows, ability of system to meet demand, non-discrimination between system users, security of supply and providing information to the TSOs of interconnected systems. 	<ol style="list-style-type: none"> 1. Minor amendment to law required providing for independence of TSO; Ministry programme in place 2. No further action required 	<ol style="list-style-type: none"> 1. Q404-Q105
1.2	Asset separation	A	<ol style="list-style-type: none"> 1. Assets and liabilities to be valued 2. Establish clear definition of asset boundaries with generation and distribution entities and measure TSO-disco flows 3. Ownership and contractual structure to be defined 4. Planning, investment and maintenance procedures to be compiled 	<ol style="list-style-type: none"> 1. Consultant has been appointed by KESH to value assets. 2. Asset boundaries well defined; codification programme in place 3. KESH programme in place 4. KESH codification programme in place 	<ol style="list-style-type: none"> 1. Q404-Q205 2. Q404-Q105 3. Q2-Q305 4. Q2-Q305
1.3	Legal separation	A	<ol style="list-style-type: none"> 1. Legally or functionally independent TSO required. 2. Need to ensure TSO is able to function independently from other activities of Utility once established. 	<ol style="list-style-type: none"> 1. KESH programme in place 2. No programme in place 	<ol style="list-style-type: none"> 1. Q404-Q105 2. Q2-Q305
1.4	Institution building	R	<ol style="list-style-type: none"> 1. Increase management capability and awareness of the differences between a vertically integrated utility and the new market model 2. Staff recruitment and training needs to commence as well as training of staff in Market Operation. Hold desktop exercises to train and improve confidence of staff in new processes and procedures 	<ol style="list-style-type: none"> 1. No programme in place to train managers in market operation. 2. No programmes in place. 	<ol style="list-style-type: none"> 1. Q2-Q405 2. Q2-Q405



			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
1.5	Systems integration	A	<ol style="list-style-type: none"> 1. Establish appropriate RTU facilities in all substations 2. Establish full electronic communications between small number of parties to ensure market measurement and settlement systems operate. 3. Establish methods of measurement, control, procurement and monitoring of ancillary services 4. Separate or firewalled IT systems (from MO and/or Utilities) 	<ol style="list-style-type: none"> 1. Programme to establish further installations in place. 2. No programme in place 3. No programmes in place 4. No programmes in place 	<ol style="list-style-type: none"> 1. Q1-Q305 2. Q3-Q305 3. Q3-Q405 4. Q2-Q405
1.6	Technical Requirements	R	<ol style="list-style-type: none"> 1. Establish Technical Standards 2. Available transfer capacity procedures 3. Formalisation of relationships between entities 4. Establish the principles of secured contingencies, quality of supply, transmission system performance, and connection arrangements 5. Establish the principles of a full set of planning procedures including data management, long term system planning, customer service, and procurement and performance of ancillary services 6. Establish the principles of a full set of operational procedures including Grid Code compliance, all operational capability, ancillary services provision and control, contingency planning, and reporting 	<ol style="list-style-type: none"> 1. No programme in place 2. SETSO pilot programme in place 3. No programme in place 4. No programme in place 5. No programme in place 6. No programme in place 	<ol style="list-style-type: none"> 1. Q2-Q305 2. Q404-Q305 3. Q2-Q305 4. Q3-Q405 5. Q3-Q405 6. Q3-Q405
2. MO					
2.1	Legal & regulatory framework	G	<ol style="list-style-type: none"> 1. Market model to be prepared. 2. Legislation to provide for establishment of or requirement for MO and provide for its roles and responsibilities. 	<ol style="list-style-type: none"> 1. No further action required 2. No further action required 	
2.2	Institution building	R	<ol style="list-style-type: none"> 1. Structurally or functionally independent management of operations 2. Compliance with regulatory and market requirements 3. Market role definition 	<ol style="list-style-type: none"> 1. Implementation of management training programme required; may be covered under support programmes by USAID or SEETEC. 2. Implementation of management training programme. 3. Operational codes programme to be put in place. 	<ol style="list-style-type: none"> 1. Q2-Q305 2. Q2-Q305 3. Q2-Q305



			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
2.3	Systems integration	R	<ol style="list-style-type: none"> 1. Auditable and transparent settlement calculation procedure (both national and cross border) 2. Clear and confidential information exchange with TSOs 3. Separate or firewalled IT systems (from TSO and/or Utilities) 	<ol style="list-style-type: none"> 1. Implementation of simple settlement IT system required 2. No programme in place 3. No programme in place 	<ol style="list-style-type: none"> 1. Q2-Q305 2. Q2-Q305 3. Q2-Q305
3. Independent Regulator					
3.1	Legal & regulatory framework	G	<ol style="list-style-type: none"> 1. Independent Regulator required 2. Regulator to be responsible for ensuring non-discrimination, effective competition and the efficient functioning of the market. 	<ol style="list-style-type: none"> 1. No further work required. 2. No further actions required 	
3.2	Institution building	A	<ol style="list-style-type: none"> 1. Regulator to agree tariff methodology and licensing procedures. 2. Secure & transparent funding 3. Technical capability to be largely internal rather than largely external 	<ol style="list-style-type: none"> 1. No further actions required 2. No further actions required 3. Pierce Atwood programme in place 	<ol style="list-style-type: none"> 3. Q1-Q305
3.3	Issue licences	G	<ol style="list-style-type: none"> 1. Regulator should have ability to issue and revoke licences. 2. Licensing procedures to be established. 3. Regulatory structure for licensing of construction of new generation to be finalised. 	<ol style="list-style-type: none"> 1. No further action required 2. Procedures and criteria for issuing licences to be further developed 3. No further action required 	<ol style="list-style-type: none"> 2. Q105
3.4	Write Grid Code	R	<ol style="list-style-type: none"> 1. Approve Grid Code written by TSO. 2. Establish bulk of the Grid Code including Security and Quality of Supply Standards, Connection Conditions, Planning Code, Operating Codes, Metering Code, Basic Data Registration Code. 	<ol style="list-style-type: none"> 1. No programme in place 2. ERE programme in place pending results of EdF study 	<ol style="list-style-type: none"> 1. Q1-Q305 2. Q2-Q305



			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
3.5	Publish G, T & D tariffs	A	<ol style="list-style-type: none"> 1. Agree tariff methodology, including appropriate returns for industry regulated businesses. 2. Need to agree asset valuation, ownership and long-term investment plans. 3. Government policy required on tariff cross subsidy 4. Calculate G, T and D tariffs according to methodology 	<ol style="list-style-type: none"> 1. ERE tariff study in progress with Pierce Atwood assistance. 2. WB sector reform study in progress. 3. Government sector strategy programme in place 4. ERE/University programme in place 	<ol style="list-style-type: none"> 1. Q105 2. Q404-Q205 3. Q404-Q205 4. Q2-Q305
4. Competition for eligible customers					
4.1	Set customer threshold	A	<ol style="list-style-type: none"> 1. Eligible customer threshold to be defined. 2. IT and dispatch systems must be able to handle metering requirements. 	<ol style="list-style-type: none"> 1. Ministry programme in place 2. Mini-SCADA under construction 	<ol style="list-style-type: none"> 1. Q404-Q205 2. Q404-Q205
4.2	Switching procedures	R	<ol style="list-style-type: none"> 1. Participants have TPA at TSO and disco voltage levels 2. Develop market rules and notification procedures 3. Set criteria and compile list of eligible customers and suppliers 	<ol style="list-style-type: none"> 1. No technical and market support programme for TSO in place 2. Technical and market support programme for disco not in place 3. Ministry programme in place; awaiting threshold to be set 	<ol style="list-style-type: none"> 1. Q2-Q305 2. Q3-Q405 3. Q2-Q305
5. Third Party Access					
5.1	Legal & regulatory framework	A	<ol style="list-style-type: none"> 1. Third parties to be granted right of access to networks. 2. Grid Code to provide for conditions of such access. 3. Prices for access to be prescribed. 	<ol style="list-style-type: none"> 1. No further action necessary. 2. Ministry programme in place; awaiting grid code 3. No programme currently in place. 	<ol style="list-style-type: none"> 2. Q2-Q305 3. Q2-Q305
5.2	CBT participation	G	<ol style="list-style-type: none"> 1. Need to resolve issue of tax payments 2. Extension of CBT to non-TSO participants 3. Allocation methodology of revenues to TSOs 	<ol style="list-style-type: none"> 1. SETSO to implement 1-3. 	<ol style="list-style-type: none"> 1. Ongoing
5.3	Grid & interconnector access	A	<ol style="list-style-type: none"> 1. Rules for TPA to interconnectors consistent on either end and for imports and exports 2. Publish available capacity on interconnectors 3. Rules to convert interconnector notified contracted transfers into aggregate interconnector flow 	<ol style="list-style-type: none"> 1. Defined in Grid Code which is under development 2. No institution building programme in place 3. No institution building programme in place 	<ol style="list-style-type: none"> 1. Q1-Q205 2. Q1-Q305 3. Q1-Q305
6. Liberalised electricity market					



			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
6.1	Agree market structure	A	<ol style="list-style-type: none"> 1. Agree market structure including number of participants and their commercial links 2. Implement market structure 3. Agree market model including counterparty credit risk, government guarantees and wholesale price exposure. 4. Implement market model 	<ol style="list-style-type: none"> 1. WB consultants reform study in place 2. Ministry internal programme will implement new structure 3. Pierce Atwood programme in place 4. No programme in place; awaiting market model 	<ol style="list-style-type: none"> 1. Q404-Q205 2. Q1-Q205 3. Q404-Q105 4. Q1-Q205
6.2	Write market rules	A	<ol style="list-style-type: none"> 1. Write market rules, including rules to allow participants to enter and leave market 2. Implement market rules including conditions for contracts to be struck, notified and recorded. 3. Define dispute resolution process 	<ol style="list-style-type: none"> 1. Ministry programme in place; support from Pierce Atwood 2. No programme in place; awaiting market rules 3. No programme in place; regulator responsible 	<ol style="list-style-type: none"> 1. Q1-Q205 2. Q1-Q205 3. Q1-Q205
6.3	Implement market rules	R	<ol style="list-style-type: none"> 1. Participants must be notified of rights and obligations 2. Monitoring of transactions must be timely and accurate 3. Dispute resolution mechanism should provide for timely and low-cost resolution of disputes through clear mechanism. 	<ol style="list-style-type: none"> 1. No programme in place 2. No programme in place 3. No programme in place; regulator responsible 	<ol style="list-style-type: none"> 1. Q1-Q205 2. Q3-Q405 3. Q3-Q405
7. Governance					
7.1	Public Accountability	A	<ol style="list-style-type: none"> 1. Clear reporting mechanisms of Regulator and market participants. 2. Public hearings and publication of decisions of Regulator. 3. Published code of ethics of Regulator. 	<ol style="list-style-type: none"> 1. No further action required. 2. No programme in place 3. No programme in place 	<ol style="list-style-type: none"> 2. Q2-Q305 3. Q205
7.2	Authority	R	<ol style="list-style-type: none"> 1. Regulator requires effective method of enforcement of decisions and ability to impose penalties for failure to comply. 2. Regulator to have ability to influence security of supply policy. 3. Capability of directing sector strategy. 	<ol style="list-style-type: none"> 1. No plans to amend law. 2. No programme in place 3. No programme in place 	<ol style="list-style-type: none"> 1. Q3-Q405 2. Q3-Q405 3. Q3-Q405



9 BiH – Current position and plans

The position in Bosnia and Herzegovina (“BiH”) is complicated by the fact that there are three separate jurisdictions and three separate vertically integrated utilities, namely Elektroprivreda BiH, Elektroprivreda HZHB and Elektroprivreda RS. Two of the utilities are from the Federation of BiH (one of two entities of BiH), and the third is from the Republic of Srpska. Each of the entities within BiH, Republika Srpska (“RS”) and the Federation of Bosnia and Herzegovina (“Federation”) has its own ministry, has established its own regulator (entity Electricity Regulatory Commissions, FERC and SERC). Additionally, the state level of BiH has established a third regulator, the State Electricity Regulatory Commission (SERC).

1. TSO/ISO

On 29 July 2004 two new electricity laws were passed, one provided for the establishment of an ISO by mid 2005 and the other provided for the establishment of a Transco by the end of 2005. The Transco will own all transmission assets and will be responsible for operation of the transmission system and transmission-related activities, such as, maintenance. The ISO, likely to be a successor to ZEKČ, will be responsible for the operation of central control centre facilities, operation of the balancing market, provision of system services, the procurement of ancillary services, development and enforcement of reliability standards, development and administration of the grid code and market rules and other activities. The ISO is required to be an independent entity.

Asset valuation should be completed by mid 2005, and the Entities will be the shareholders of the Transco. Assets are expected to be separated in Nov 2004. Functional separation is underway by utilities – the ISO will operate 400 and 220 and 110kV lines. Responsibilities and interface points are still to be worked out between the Transco and the ISO regarding planning, investment and maintenance. In the RS there are five legally unbundled discos. The Transco law defines the cut-off point between transmission, distribution and generation, although the EPs plan to request exceptions. A full SCADA/EMS system allowing supply of information to the ISO is expected by end 2007.

Existing standards are mainly based on the UCTE Operational Handbook; planning standards are reported to be in preparation. Quality of supply is in accordance with EN50160, but a full set of standards needs to be completed. Net transfer capacities are published by ETSO seasonally. The part of the transmission system (mainly ERS part of network), which had been connected to the former UCTE II is part of CBT trial mechanism and now the entire BiH network participates. There are some principles of secured contingencies, transmission system performance, and connection arrangements in place due to custom and practice which need to be formalised.

Certain principles such as data management and customer services are already established but not formally codified. Likewise, certain operational principles including operational capability, ancillary services provision and control and contingency planning, are in place due to custom and practice, but not formally written down or agreed. The principles and responsible parties for system planning and operational procedures have not yet been agreed upon. Also, it has not yet been agreed if the ISO will purchase and sell ancillary services or act as transaction co-ordinator.

2. MO

The MO is planned to be a settlement department of the ISO rather than a separate body. It will be responsible for settlement and accounting of the balancing market. The MO function is not yet explicitly provided for in the law, as the market design has not been decided. SEETEC is currently drafting market rules which will describe the MO’s functions. Regulators are to work together to establish conditions for a single market.

3. Independent Regulator

There are three independent regulators, which have been set-up in BiH: two entity and one state body. FERC, the Federation Regulator, and RSERC, the Regulator in RS, have been operational since August 2004 and are responsible for licensing and approving tariffs for generation,



distribution and supply within their jurisdiction. The entity regulators are also responsible for internal trade issues in the Federation and RS respectively. SERC, the state regulator, was established at the end of 2003, although not fully staffed until August 2004, and is responsible for regulation of transmission, including approving transmission tariffs and licensing. All of the regulators are currently developing rules on tariff methodology and rules on licences. SERC has issued temporary transmission licenses to the Elektroprivrede.

The regulators are responsible for issuing and revoking licences for undertaking the operations within the domain of each regulator. Licensing procedures have yet to be prepared. Temporary licenses have been issued with extension to end 2005 pending market restructuring.

The regulators have responsibility for tariff setting. SERC is required to, but has not yet, published a tariff methodology for transmission services, ancillary services and system operations. The entity regulators are responsible for setting tariff methodologies for determining prices of supply and distribution of electricity to tariff customers and prices for regulated generation. Pierce Atwood is currently assisting and training the regulators in tariff methodologies. The regulators are funded by way of charges and fees.

Entity regulators have a role in resolving disputes in their respective jurisdictions. The decisions of all regulators are final, but dissatisfied parties may appeal to a court of competent jurisdiction. However, some of the penalties imposed by the regulators are quite weak and there has not yet been any enforcement.

4. Competition for eligible customers

Currently, the eligible customer limit is not established in primary legislation for the Federation but is set at 10GWh per annum in RS. However, due to the absence of any sizeable customers, no customers qualify to participate in the market as yet. In the Federation, it appears likely that the threshold for qualifying as an eligible customer will be set at

40GWh, encompassing 6-7 eligible customers. The regulators plan to harmonise their plans for eligible customers.

5. Third Party Access

BiH has informal TPA already, due to the presence of three utilities needing access to interconnectors post-resynchronisation. In addition, the ISO will be required, pursuant to the new ISO law, to provide equal and fair access to the transmission system. However, there are currently no tariffs set for connection or use of system, providing an effective barrier to access. Rules for access are being formalised by KEMA in the Grid Code, which is technically expected at the end of 2004 and will be submitted to SERC for approval after its final revision.

6. Market Rules

The three regulators will work together to establish the conditions for a single market in BiH. At present there is a regulated regime with an informal market as a result of surpluses/shortages over the regulated regime. These surpluses/shortages are traded abroad by each of the three utilities and a large consumer that has, in the past, purchased from abroad. SEETEC has drafted final market rules; however, there is as of yet no agreement with regard to the transition to the final market.

7. Governance

Legislation requires each of the regulators report to their respective Parliaments annually. The regulators have been given powers to require information from licensees pursuant to legislation. There seems to be some overlap of responsibility between each of the regulators and between each of the ministries (State and entity level), which is being addressed. All three regulators have adopted rules of procedure, which prescribe a transparent decision-making process and codes of ethics governing conflicts of interest and other ethical standards.



Initial Regional Market Requirements to be fulfilled

		Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales	
1. TSO/ISO					
1.1	Legal & regulatory framework	G	<ol style="list-style-type: none"> 1. Legislation requiring or establishing legally or functionally separate ISO required. 2. ISO to be responsible for managing energy flows, ability of system to meet demand, non-discrimination between system users, security of supply and providing information to the TSOs of interconnected systems. 	<ol style="list-style-type: none"> 1. No further action required. 2. No further action required. 	
1.2	Asset separation	A	<ol style="list-style-type: none"> 1. Assets and liabilities to be valued 2. Establish clear definition of asset boundaries with generation and distribution entities and measure Transco-disco flows 3. Ownership and contractual structure to be defined. 4. Planning, investment and maintenance procedures to be compiled 	<ol style="list-style-type: none"> 1. One valuation has been done, but the methodologies were different between the utilities. A revaluation is planned, but has not yet begun. 2. Asset boundaries set by law, but not agreed with EPs. No programme to meter Transco-disco flows in place. 3. Asset separation programme developed by PA Consulting, but it has yet to be approved by the Federation Parliament. 4. Traditional procedures exist but Transco and ISO must clarify roles. Compilation required. No programme in place. 	<ol style="list-style-type: none"> 1. Q404-Q205 2. Q405 3. Q404-Q205 4. Q3-Q405
1.3	Legal separation	A	<ol style="list-style-type: none"> 1. Legally or functionally independent ISO required. 2. Need to ensure ISO is able to function independently from other activities of utilities once established. 	<ol style="list-style-type: none"> 1. Formation of both Transco and ISO to be completed, programme in place. 2. No further action required. 	<ol style="list-style-type: none"> 1. Q105
1.4	Institution building	R	<ol style="list-style-type: none"> 1. Increase management capability and awareness of the differences between a vertically integrated utility and the new market model 2. Staff recruitment and training needs to commence as well as training of staff in Market Operation. Hold desktop exercises to train and improve confidence of staff in new processes and procedures 	<ol style="list-style-type: none"> 1. No programme in place 2. No programme in place 	<ol style="list-style-type: none"> 1. Q2-Q405 2. Q2-Q405



			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
1.5	Systems integration	R	<ol style="list-style-type: none"> 1. Establish appropriate RTU and metering facilities in all substations 2. Establish full electronic communications between small number of parties to ensure market measurement and settlement systems operate. 3. Establish methods of measurement, control, procurement and monitoring of ancillary services 4. Separate or firewalled IT systems (from MO and/or Utilities) 	<ol style="list-style-type: none"> 1. Utility programmes in place. 2. ZEKC programme in place, but insufficient to ensure market operation. 3. Process needs to be formalised and then implemented; no programme in place 4. No programme in place 	<ol style="list-style-type: none"> 1. Q404-Q405 2. Q404-Q305 3. Q3-Q405 4. Q2-Q405
1.6	Technical Requirements	R	<ol style="list-style-type: none"> 1. Establish Technical Standards 2. Available transfer capacity procedures 3. Formalisation of relationships between entities 4. Establish the principles of secured contingencies, quality of supply, transmission system performance, and connection arrangements 5. Establish the principles of a full set of planning procedures including data management, long term system planning, customer service, and procurement and performance of ancillary services 6. Establish the principles of a full set of operational procedures including Grid Code compliance, all operational capability, ancillary services provision and control, contingency planning, and reporting 	<ol style="list-style-type: none"> 1. No programme in place. 2. SETSO Pilot Programme in place. 3. No programme in place. 4. Codify and complete existing; no programme in place 5. Codify and complete existing; no programme in place 6. Codify and complete existing; no programme in place 	<ol style="list-style-type: none"> 1. Q2-Q305 2. Q404-Q305 3. Q2-Q305 4. Q3-Q405 5. Q3-Q405 6. Q3-Q405
2. MO					
2.1	Legal & regulatory framework	A	<ol style="list-style-type: none"> 1. Market model to be prepared. 2. Legislation to provide for establishment of or requirement for MO and provide for its roles and responsibilities. 	<ol style="list-style-type: none"> 1. Final market designed by SEETEC but transition to such not yet agreed. 2. ISO law in place; ISO formation in process. 	<ol style="list-style-type: none"> 1. Q404-Q205 2. Q404-Q205
2.2	Institution building	R	<ol style="list-style-type: none"> 1. Structurally or functionally independent management of operations 2. Compliance with regulatory and market requirements 3. Market role definition 	<ol style="list-style-type: none"> 1. No programme in place; part of ISO. 2. No programme in place; part of ISO 3. No programme in place; part of ISO 	<ol style="list-style-type: none"> 1. Q2-Q305 2. Q2-Q305 3. Q2-Q305



			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
2.3	Systems integration	R	<ol style="list-style-type: none"> 1. Auditable and transparent settlement calculation procedure (both national and cross border) 2. Clear and confidential information exchange with TSOs 3. Separate or firewalled IT systems (from TSO and/or Utilities) 	<ol style="list-style-type: none"> 1. No programme in place 2. Limited SCADA system in place; full SCADA/EMS planned for end 2007; capability for Initial REM uncertain. 3. No programme in place 	<ol style="list-style-type: none"> 1. Q2-Q305 2. Q404-Q405 3. Q2-Q405
3. Independent Regulator					
3.1	Legal & regulatory framework	G	<ol style="list-style-type: none"> 1. Independent Regulator required 2. Regulator to be responsible for ensuring non-discrimination, effective competition and the efficient functioning of the market. 	<ol style="list-style-type: none"> 1. No further action required 2. No further action required 	
3.2	Institution building	A	<ol style="list-style-type: none"> 1. Regulator to agree tariff methodology and licensing procedures. 2. Secure & transparent funding 3. Technical capability to be largely internal rather than largely external 	<ol style="list-style-type: none"> 1. No further action required 2. No further action required 3. Pierce Atwood programme in place 	<ol style="list-style-type: none"> 3. Q1-Q305
3.3	Issue licences	A	<ol style="list-style-type: none"> 1. Regulator should have ability to issue and revoke licences. 2. Licensing procedures to be established. 3. Regulatory structure for licensing of construction of new generation to be finalised. 	<ol style="list-style-type: none"> 1. No further action required. 2. Programme in place 3. No further action required. 	<ol style="list-style-type: none"> 2. Q2-Q405
3.4	Write Grid Code	A	<ol style="list-style-type: none"> 1. Approve Grid Code written by TSO. 2. Establish bulk of the Grid Code including Security and Quality of Supply Standards, Connection Conditions, Planning Code, Operating Codes, Metering Code, Basic Data Registration Code. 	<ol style="list-style-type: none"> 1. Transco and ISO being formed. KEMA has drafted grid code and it will be submitted to SERC for approval. 2. KEMA has drafted Grid Code and it will be submitted to SERC for approval. 	<ol style="list-style-type: none"> 1. Q404-Q205 2. Q404-Q205
3.5	Publish G, T & D tariffs	A	<ol style="list-style-type: none"> 1. Agree tariff methodology, including appropriate returns for industry regulated businesses. 2. Need to agree asset valuation, ownership and long-term investment plans. 3. Government policy required on tariff cross subsidy 4. Calculate G, T and D tariffs according to methodology 	<ol style="list-style-type: none"> 1. All regulators developing rules on tariff methodology. 2. No programme in place 3. No programme in place 4. FERC and RSERC developing G and D tariffs. SERC developing T tariffs. 	<ol style="list-style-type: none"> 1. Q404-Q105 2. Q2-Q305 3. Q3-Q405 4. Q3-Q405
4. Competition for eligible customers					



			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
4.1	Set customer threshold	A	<ol style="list-style-type: none"> 1. Eligible customer threshold to be defined. 2. IT and dispatch systems must be able to handle metering requirements. 	<ol style="list-style-type: none"> 1. All regulators have programme in place to harmonise thresholds. 2. No utility programmes in place; awaiting market rules definition of metering and settlement 	<ol style="list-style-type: none"> 1. Q404-Q105 2. Q2-Q405
4.2	Switching procedures	R	<ol style="list-style-type: none"> 1. Participants have TPA at Transco and disco voltage levels 2. Develop market rules and notification procedures 3. Set criteria and compile list of eligible customers and suppliers 	<ol style="list-style-type: none"> 1. SERC programme in place to define necessary steps and documents for TPA 2. Grid code being developed by KEMA and SEETEC has developed market rules; no notification programme in place 3. Programme not in place; awaiting threshold finalisation 	<ol style="list-style-type: none"> 1. Q2-Q305 2. Q404-Q205 3. Q3-Q405
5. Third Party Access					
5.1	Legal & regulatory framework	A	<ol style="list-style-type: none"> 1. Third parties to be granted right of access to networks. 2. Grid Code to provide for conditions of such access. 3. Prices for access to be prescribed. 	<ol style="list-style-type: none"> 1. No further action required. 2. Programme in place; Grid Code has been drafted by KEMA and will be submitted to SERC for approval. 3. Pierce Atwood support programme in place 	<ol style="list-style-type: none"> 2. Q404-Q205 3. Q205
5.2	CBT participation	G	<ol style="list-style-type: none"> 1. Need to resolve issue of tax payments 2. Extension of CBT to non-ISO participants 3. Allocation methodology of revenues to ISO (and/or Transco) 	<ol style="list-style-type: none"> 1. SETSO programme in place to implement 1-3. 	<ol style="list-style-type: none"> 1. Ongoing
5.3	Grid & interconnector access	A	<ol style="list-style-type: none"> 1. Rules for TPA to interconnectors consistent on either end and for imports and exports 2. Publish available capacity on interconnectors 3. Rules to convert interconnector notified contracted transfers into aggregate interconnector flow 	<ol style="list-style-type: none"> 1. Addressed in Grid Code; KEMA programme in place 2. No programme in place 3. Addressed in Grid Code; KEMA programme in place 	<ol style="list-style-type: none"> 1. Q404-Q205 2. Q1-Q205 3. Q404-Q205
6. Liberalised electricity market					
6.1	Agree market structure	R	<ol style="list-style-type: none"> 1. Agree market structure including number of participants and their commercial links 2. Implement market structure 3. Agree market model including counterparty credit risk, government guarantees and wholesale price exposure. 4. Implement market model 	<ol style="list-style-type: none"> 1. SEETEC has drafted, no agreement on transition 2. Market structure will be implemented alongside unbundling, which is a government function and for which no programme is in place 3. No programme in place 4. No programme in place 	<ol style="list-style-type: none"> 1. Q404-Q205 2. Q1-Q205 3. Q1-Q205 4. Q1-Q205



			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
6.2	Write market rules	A	<ol style="list-style-type: none"> 1. Write market rules, including rules to allow participants to enter and leave market 2. Implement market rules including conditions for contracts to be struck, notified and recorded. 3. Define dispute resolution process 	<ol style="list-style-type: none"> 1. SEETEC and PA Consulting advice to regulator market design support programmes in place 2. Market rules drafted but not approved. Programmes in place. 3. Market design support programmes in place 	<ol style="list-style-type: none"> 1. Q404-Q205 2. Q404-Q205 3. Q404-Q205
6.3	Implement market rules	R	<ol style="list-style-type: none"> 1. Participants must be notified of rights and obligations 2. Monitoring of transactions must be timely and accurate 3. Dispute resolution mechanism should provide for timely and low-cost resolution of disputes through clear mechanism. 	<ol style="list-style-type: none"> 1. SEETEC, PA Consulting market design support programmes in place 2. No programme in place 3. No programme in place 	<ol style="list-style-type: none"> 1. Q404-Q305 2. Q404-Q305 3. Q404-Q305
7. Governance					
7.1	Public Accountability	G	<ol style="list-style-type: none"> 1. Clear reporting mechanisms of Regulator and market participants. 2. Public hearings and publication of decisions of Regulator. 3. Published code of ethics of Regulator. 	<ol style="list-style-type: none"> 1. Regulators will work together to eliminate regulatory gaps and overlaps. 2. Regulator programme in place 3. No further action required 	<ol style="list-style-type: none"> 1. Q404-Q105 2. Q404-Q105
7.2	Authority	R	<ol style="list-style-type: none"> 1. Regulator requires effective method of enforcement of decisions and ability to impose penalties for failure to comply. 2. Regulator to have ability to influence security of supply policy. 3. Capability of directing sector strategy. 	<ol style="list-style-type: none"> 1. Some regulatory enforcement mechanisms need to be strengthened, although law provides possibility for imposing penalties. 2. No programme in place 3. No further action required 	<ol style="list-style-type: none"> 1. Q3-Q405 2. Q3-Q405



10 Croatia – Current position and plans

1. TSO/ISO

CROISMO is the legally separate system and market operator and has been operational since 2003. The law currently provides for an independent system operator to co-ordinate electricity generation, transmission and distribution systems. However, a new law is being proposed to result in the creation of a TSO and MO from CROISMO. Transmission assets are currently owned by HEP d.d., and leased to CROISMO and HEP Transmission company. CROISMO is legally separate from HEP with unbundled accounts. The Regulator, CERC, believes that further functional, financial and staff separation is required in order for CROISMO (or the new separated TSO and MO) to be fully independent. There are ministry plans to make the MO fully independent from HEP (ownership unbundling) by 2005. The boundaries between the transmission system and the generation and distribution systems are well defined although can be variable and must be made consistent. Investment and planning procedures will also change in accordance with new legislation.

HEP has SCADA and EMS in place and all large customers have remote commercial metering. Existing systems are well equipped and adequate for initial market operation. The utility is developing its EMS to include as many functions as possible to be real-time and on-line.

Planning standards appear to be well established. Planning studies are carried out by the utility based on clear economic and financial criteria. There is a well established operational planning and outage coordination process in place.

Net transfer capacities are published by ETSO seasonally. HEP has not taken part in the CBT mechanism which would allow participation in the co-ordinated auction (CA) method of allocating transfer capacity.

Many principles are well established through documented regulations and instructions for secured contingencies, quality of supply, transmission system performance, and connection arrangements.

Likewise, many principles are well established through documented regulations for planning procedures including data management, long term system planning, customer service, and procurement and performance of ancillary services, and for operational procedures including Grid Code compliance, all operational capability, ancillary services provision and control, contingency planning, and reporting. However, standards, planning and operational procedures need to be codified and added to commensurate with the terms of the Grid Code and market licences.

2. MO

The MO function is carried out by CROISMO at present, but if the proposed new legislation is passed as drafted, then the MO role will become a completely separate role.

3. Independent Regulator

The Croatian Energy Regulatory Commission (“CERC”) has been operational since the end of 2001 and is independent of the energy industry and the government. However there have been delays in approval of the regulator’s budget. CERC also relies on the Energy Institute for much of its technical and analytical capabilities. The regulator’s responsibilities include the issue and revocation of licences for generation, transmission, distribution, supply, operation and control of system and organisation of market. It has issued licenses to industry participants in all of these roles.

It is proposed to establish a regulatory agency under the new laws with largely similar functions to CERC. The existing CERC will continue to operate until the members of the agency are appointed.

4. Competition for eligible customers

According to the law, eligible customers are defined as those with annual consumption over 40GWh pa, which represents approximately 10% of the market. In practice there is no customer switching which has prompted the ministry to plan an investigation into the reasons behind



this. The ministry feels that customers do not want to become eligible due to lack of education about its benefits, while the regulator is of the opinion that the lack of unbundling of HEP is the key obstacle to eligible customer participation in the market. However, HEO is of the opinion that the retail tariff level does not motivate the eligible customers to change supplier.

The proposed new Electricity Markets Act sets the threshold for attaining eligible customer status at 20GWh, and sets out a programme for reducing that threshold over time, until 1 July 2008 when all customers shall become eligible.

5. Third Party Access

The law requires CROISMO and DSO to allow access to their networks on a non-discriminatory basis, based on principles of third party access. CERC has approved an order relating to the charges for use of transmission and distribution system, with system operator tariff included in total transmission tariff. With the establishment of the TSO as a legal entity, this will become transparent.

The TSO and the DSO must grant access to their systems on the basis of the conditions set out in the General Conditions of Electricity Supply and in accordance with the Grid Code. The ministry will approve the Grid Code drafted by the TSO, and has obtained the opinion of the regulator, but the existing draft of Grid Code needs further work for completion by mid 2005.

6. Market Rules

The market rules will need to be revised in the light of forthcoming changes to legislation. Rights and obligations to be defined by electricity law, grid code and market rules – all yet to be approved.

7. Governance

The regulator has no authority to impose fines, though it may bring a case to the court to impose fines for breach of the law, etc. Legislative change may be required; in addition the regulator would need to ensure it has sufficient capacity and adequate procedures to undertake an enforcement role.



Initial Regional Market Requirements to be fulfilled

			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
1. TSO/ISO					
1.1	Legal & regulatory framework	A	<ol style="list-style-type: none"> 1. Legislation requiring or establishing legally or functionally separate TSO required. 2. TSO to be responsible for managing energy flows, ability of system to meet demand, non-discrimination between system users, security of supply and providing information to the TSOs of interconnected systems. 	<ol style="list-style-type: none"> 1. Ministry programme in place; new legislation to be passed by Government. 2. Ministry programme in place; new legislation to be passed by Government. 	<ol style="list-style-type: none"> 1. Q404-Q205 2. Q404-Q205
1.2	Asset separation	A	<ol style="list-style-type: none"> 1. Assets and liabilities to be valued 2. Establish clear definition of asset boundaries with generation and distribution entities and measure TSO-disco flows 3. Ownership and contractual structure need to be revised after new law is passed. 4. Planning, investment and maintenance procedures to be compiled 	<ol style="list-style-type: none"> 1. Assets valued by HEP; leasing arrangement in place. 2. Asset boundaries defined under leasing agreement. 3. Ministry programme in place related to the creation of MO. 4. Needs to be revised after new law passed 	<ol style="list-style-type: none"> 2. Q205 3. Q205 4. Q205
1.3	Legal separation	A	<ol style="list-style-type: none"> 1. Legally or functionally independent TSO required. 2. Need to ensure TSO is able to function independently from other activities of Utility once established. 	<ol style="list-style-type: none"> 1. Establishment of independent TSO to follow passing of new electricity law. 2. Ministry programme in place 	<ol style="list-style-type: none"> 1. Q105 2. Q205
1.4	Institution building	A	<ol style="list-style-type: none"> 1. Increase management capability and awareness of the differences between a vertically integrated utility and the new market model 2. Staff recruitment and training needs to commence as well as training of staff in Market Operation. Hold desktop exercises to train and improve confidence of staff in new processes and procedures 	<ol style="list-style-type: none"> 1. Ministry programme in place 2. Ministry programme in place 	<ol style="list-style-type: none"> 1. Q2-Q405 2. Q2-Q405



			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
1.5	Systems integration	R	<ol style="list-style-type: none"> 1. Establish appropriate RTU facilities in all substations 2. Establish full electronic communications between small number of parties to ensure market measurement and settlement systems operate. 3. Establish methods of measurement, control, procurement and monitoring of ancillary services 4. Separate or firewalled IT systems (from MO and/or Utilities) 	<ol style="list-style-type: none"> 1. No further action required. 2. No further action required 3. Capability in place; process needs to implemented and formalised; no programme in place 4. CROISMO programme in place 	<ol style="list-style-type: none"> 3. Q3-Q405 4. Q2-Q405
1.6	Technical requirements	R	<ol style="list-style-type: none"> 1. Establish Technical Standards 2. Available transfer capacity procedures 3. Formalisation of relationships between entities 4. Establish the principles of secured contingencies, quality of supply, transmission system performance, and connection arrangements 5. Establish the principles of a full set of planning procedures including data management, long term system planning, customer service, and procurement and performance of ancillary services 6. Establish the principles of a full set of operational procedures including Grid Code compliance, all operational capability, ancillary services provision and control, contingency planning, and reporting 	<ol style="list-style-type: none"> 1. No further action required 2. No programme in place. 3. No programme in place. 4. Codify and complete existing; programme in place – issues dealt with in relevant sub laws that have been prepared. 5. Codify and complete existing; no programme in place 6. Codify and complete existing; programme in place 	<ol style="list-style-type: none"> 2. Q305 3. Q1-Q205 4. Q3-Q405 5. Q3-Q405 6. Q3-Q405
2. MO					
2.1	Legal & regulatory framework	A	<ol style="list-style-type: none"> 1. Market model to be prepared. 2. Legislation to provide for establishment of or requirement for MO and provide for its roles and responsibilities. 	<ol style="list-style-type: none"> 1. Redesign of market planned subsequent to law changes 2. New laws will specify MO role 	<ol style="list-style-type: none"> 1. Q404-Q205
2.2	Institution building	A	<ol style="list-style-type: none"> 1. Structurally or functionally independent management of operations 2. Compliance with regulatory and market requirements 3. Market role definition 	<ol style="list-style-type: none"> 1. CROISMO to be separated from HEP under new law. 2. New law to redefine requirements; programme to be put in place to ensure compliance. 3. Redesign of market planned subsequent to law changes 	<ol style="list-style-type: none"> 1. Q1-Q205 2. Q1-Q205 3. Q105



			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
2.3	Systems integration	A	<ol style="list-style-type: none"> 1. Auditable and transparent settlement calculation procedure (both national and cross border) 2. Clear and confidential information exchange with TSOs 3. Separate or firewalled IT systems (from TSO and/or Utilities) 	<ol style="list-style-type: none"> 1. Programme in place 2. SCADA system in place but needs updating; programme in place 3. Programme in place 	<ol style="list-style-type: none"> 1. Q2-Q305 2. Q2-Q305 3. Q2-Q405
3. Independent Regulator					
3.1	Legal & regulatory framework	G	<ol style="list-style-type: none"> 1. Independent Regulator required 2. Regulator to be responsible for ensuring non-discrimination, effective competition and the efficient functioning of the market. 	<ol style="list-style-type: none"> 1. No further action required 2. No further action required 	
3.2	Institution building	A	<ol style="list-style-type: none"> 1. Regulator to agree tariff methodology and licensing procedures. 2. Secure & transparent funding 3. Technical capability to be largely internal rather than largely external 	<ol style="list-style-type: none"> 1. No further action required 2. No further action required 3. New law will enhance institution capacity of regulator; Ministry programme in place to implement 	<ol style="list-style-type: none"> 3. Q1-Q305
3.3	Issue licences	G	<ol style="list-style-type: none"> 1. Regulator should have ability to issue and revoke licences. 2. Licensing procedures to be established. 3. Regulatory structure for licensing of construction of new generation to be finalised. 	<ol style="list-style-type: none"> 1. No further action required 2. Licensing procedure established and licences have been issued. No further action required. 3. No further legislation required 	
3.4	Write Grid Code	A	<ol style="list-style-type: none"> 1. Approve Grid Code written by TSO. 2. Establish bulk of the Grid Code including Security and Quality of Supply Standards, Connection Conditions, Planning Code, Operating Codes, Metering Code, Basic Data Registration Code. 	<ol style="list-style-type: none"> 1. CROISMO programme in place. Regulator has reviewed and commented on Grid Code, not yet approved by Ministry 2. CROISMO programme in place 	<ol style="list-style-type: none"> 1. Q404-Q205 2. Q404-Q205
3.5	Publish G, T & D tariffs	A	<ol style="list-style-type: none"> 1. Agree tariff methodology, including appropriate returns for industry regulated businesses. 2. Need to agree asset valuation, ownership and long-term investment plans. 3. Government policy required on tariff cross subsidy 4. Calculate G, T and D tariffs according to methodology 	<ol style="list-style-type: none"> 1. May change under new legislation; Ministry programme in place 2. May change under new legislation; Ministry programme in place 3. Ministry programme in place 4. May change under new legislation; Ministry programme in place 	<ol style="list-style-type: none"> 1. Q404-Q205 2. Q404-Q205 3. Q1-Q305 4. Q2-Q305
4. Competition for eligible customers					



			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
4.1	Set customer threshold	G	<ol style="list-style-type: none"> 1. Eligible customer threshold to be defined. 2. IT and dispatch systems must be able to handle metering requirements. 	<ol style="list-style-type: none"> 1. Ministry programme in place to revise law to decrease threshold in future 2. No further action required 	<ol style="list-style-type: none"> 1. Q404-Q105
4.2	Switching procedures	G	<ol style="list-style-type: none"> 1. Participants have TPA at TSO and disco voltage levels 2. Develop market rules and notification procedures 3. Set criteria and compile list of eligible customers and suppliers 	<ol style="list-style-type: none"> 1. No further action required 2. No further action required 3. No further action required 	
5. Third Party Access					
5.1	Legal & regulatory framework	A	<ol style="list-style-type: none"> 1. Third parties to be granted right of access to networks. 2. Grid Code to provide for conditions of such access. 3. Prices for access to be prescribed. 	<ol style="list-style-type: none"> 1. No further action required 2. Ministry programme in place 3. No further action required 	<ol style="list-style-type: none"> 2. Q404-Q205
5.2	CBT participation	A	<ol style="list-style-type: none"> 1. Need to resolve issue of tax payments 2. Extension of CBT to non-TSO participants 3. Allocation methodology of revenues to TSOs 	<ol style="list-style-type: none"> 1. Croatia plans to join CBT mechanism 2. SETSO to implement 3. SETSO to implement 	<ol style="list-style-type: none"> 1. Q205 2. Q2-Q405 3. Q2-Q405
5.3	Grid & interconnector access	A	<ol style="list-style-type: none"> 1. Rules for TPA to interconnectors consistent on either end and for imports and exports 2. Publish available capacity on interconnectors 3. Rules to convert interconnector notified contracted transfers into aggregate interconnector flow 	<ol style="list-style-type: none"> 1. TPA defined in draft Grid Code which is awaiting approval 2. Programme in place 3. CROISMO programme in place to make more transparent and publish 	<ol style="list-style-type: none"> 1. Q404-Q205 2. Q1-Q205 3. Q1-Q205
6. Liberalised electricity market					
6.1	Agree market structure	A	<ol style="list-style-type: none"> 1. Agree market structure including number of participants and their commercial links 2. Implement market structure 3. Agree market model including counterparty credit risk, government guarantees and wholesale price exposure. 4. Implement market model 	<ol style="list-style-type: none"> 1. Awaiting new Electricity Market Law to be passed 2. Ministry implementation programme planned 3. Ministry implementation programme planned 4. Ministry implementation programme planned 	<ol style="list-style-type: none"> 1. Q404-Q105 2. Q1-Q205 3. Q1-Q205 4. Q1-Q205
6.2	Write market rules	A	<ol style="list-style-type: none"> 1. Write market rules, including rules to allow participants to enter and leave market 2. Implement market rules including conditions for contracts to be struck, notified and recorded. 3. Define dispute resolution process 	<ol style="list-style-type: none"> 1. Current market rules to be amended by MO and grid code to be amended by Ministry after passing of electricity law 2. Programme in place 3. Programme not yet in place 	<ol style="list-style-type: none"> 1. Q1-Q205 2. Q3-Q405 3. Q3-Q405



			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
6.3	Implement market rules	A	<ol style="list-style-type: none"> Participants must be notified of rights and obligations Monitoring of transactions must be timely and accurate Dispute resolution mechanism should provide for timely and low-cost resolution of disputes through clear mechanism. 	<ol style="list-style-type: none"> Programme in place pending changes to legislation Monitoring programme in place No programme in place 	<ol style="list-style-type: none"> Q404-Q105 Q3-Q405 Q3-Q405
7. Governance					
7.1	Public Accountability	A	<ol style="list-style-type: none"> Clear reporting mechanisms of Regulator and market participants. Public hearings and publication of decisions of Regulator. Published code of ethics of Regulator. 	<ol style="list-style-type: none"> No further action required Regulator programme in place No further action required 	<ol style="list-style-type: none"> Q105
7.2	Authority	A	<ol style="list-style-type: none"> Regulator requires effective method of enforcement of decisions and ability to impose penalties for failure to comply. Regulator to have ability to influence security of supply policy. Capability of directing sector strategy. 	<ol style="list-style-type: none"> Programme in place, new laws to define methods of enforcement Programme in place, new laws to define regulators ability regarding security of supply No further action required 	<ol style="list-style-type: none"> Q3-Q405 Q3-Q405



11 Macedonia – Current position and plans

1. TSO/ISO

The Law for Transformation of the Utility, passed in June 2004, provides for unbundling and eventual privatisation of ESM. ESM is currently in the process of establishing two companies, MEPSO, which will be the TSO, and a separate company which will undertake generation and distribution. The separate companies are expected to be established by the end of 2004 and the transmission system, along with the dispatch centre, will be transferred to MEPSO at that time. The schedule of assets to be transferred to each of the new companies was agreed in April 2004. The boundaries between the transmission system and the generation and distribution systems are well defined.

A privatisation strategy for the separate ESM companies is expected to be developed in December 2004, although the Government is likely to want to ensure a stable regulatory regime is in effect before privatisation.

MEPSO will be responsible for dispatch, planning, investment and ensuring the system meets demand. Institutional building support is expected to come from USAID, EAR and SEETEC. A SCADA/EMS has just been installed and with the addition of further RTU's, this should be adequate for initial market operation provided that some additional functionality is created. In addition, a request for tender of a new metering and billing system has been made and the new system is expected to be implemented in mid 2005.

Planning standards appear to be quite sophisticated and well established. Planning studies are carried out by the utility based on clear economic and financial criteria. Some fine tuning is required to codify what is already done. Many planning principles are well established through documented regulations. Instructions for a full set of planning procedures including data management, long term system planning, customer service, and procurement and performance of ancillary services and for a full set of operational procedures including Grid Code compliance, all operational capability, ancillary services provision and control, contingency planning, need further codification.

Net transfer capacities are published by ETSO seasonally and were included in the CBT trial and live mechanisms during 2004. Macedonia will need to participate in the co-ordinated auction (CA) method of allocating transfer capacity in future.

Quality of supply standards are included in the existing Electricity Law. In other areas existing principles need to be codified and additional aspects included commensurate with the terms of the Grid Code and Licence.

Ancillary services requirements, especially reactive power reserve for voltage control are at present not regularly calculated although the utility is capable of doing so in collaboration with EKC. The process needs to be implemented and formalised

There appears to be sufficient qualified staff, staff skills and training. Further skills will need to be added in the lead up to initial market operation and to adequately respond to further market developments. Desktop exercises to train and improve confidence of staff in new processes and procedures are required.

2. MO

The exact definition of the MO and its responsibilities are awaiting agreement on the market design, although it is expected that at least in the short term the MO operations will be undertaken by MEPSO.

3. Independent Regulator

The independent regulator, ERC, was established with the amendments of the Energy Law from 2002 and 2003, and its first members were appointed with a decision of the Macedonian Parliament on the 23rd July 2003. ERC has been operational since January 2004. ERC is responsible, pursuant to the Energy Law, for issuing and revoking licences for generation, distribution, transmission, supply and trading of electricity. The work of ERC is financed by its own reserves of funds



which are secured through the payment of a fee from the total annual income of companies that carry out an energy related activity. The level of the fee is determined each year with a separate decision by the Macedonian Parliament. ERC is required to report to Parliament on its activities annually. Further changes to the energy law will give sufficient legal basis for licensing and this is planned to happen early in 2005. ERC is currently working on tariff methodology and licensing procedures, which it expects to be complete by end 04. It is adopting a hybrid between revenue cap and price cap regulation.

4. Competition for eligible customers

There is currently no market in Macedonia. Although the Energy Law in principle permits customers to import electricity, none have presently opted to do so. It is expected that when market opening is undertaken, the first step will be to allow customers over 20 GWh or where connected to 110kV (representing approximately 20% of the market) to freely choose their supplier. The threshold will be defined in the new Electricity Market Law to be passed at the end of 2004. Participant access and registration in the market is awaiting development of the Grid Code (which may be based on the regional Grid Code currently being developed) and market rules, and passage of the new Electricity Market Law.

5. Third Party Access

The grid code is being prepared by the TSO and will be submitted to the regulator for approval. It includes conditions for connection to the network and the integrated utility contracts with entities. MEPSO will be obliged, under the Energy Law, to allow open access to the grid. At

present, as there are neither prescribed prices for access nor prescribed terms and conditions, third party access is not available in practice. It is expected that terms and conditions of access will be included in the Grid Code. The draft operation code, connection code and planning code are expected by the end of 2004, at which point they will be evaluated by EdF and then submitted to the regulator for approval – with adoption likely in the first half of 2005. The regulator is required to establish tariffs for connection and use of system. However, establishment of tariffs, while necessary, is not sufficient to allow access to networks in absence of Grid Code to specify conditions for such access.

6. Market Rules

The market model is currently being developed with assistance from Hunton Williams, and is expected to be finalised by the end of 2004. Market rules will be developed after introduction of the Electricity Market Law.

7. Governance

Pursuant to the Energy Law, the companies that perform an energy related activity are required, upon request of the ERC, to provide any relevant documents, data and information that it requires to carry out its work. The regulator must submit annual reports to the Government, Parliament and Ministry. The Law provides for the regulator to enforce decisions through other government bodies. Primary or secondary legislation is required granting the regulator sufficient powers to enforce decisions.



Initial Regional Market Requirements to be fulfilled

		Actions Required for Initial REM		Current/Required Programmes for Initial REM	Time Scales
1. TSO/ISO					
1.1	Legal & regulatory framework	G	<ol style="list-style-type: none"> 1. Legislation requiring or establishing legally or functionally separate TSO required. 2. TSO to be responsible for managing energy flows, ability of system to meet demand, non-discrimination between system users, security of supply and providing information to the TSOs of interconnected systems. 	<ol style="list-style-type: none"> 1. No further action required. 2. No further action required 	
1.2	Asset separation	G	<ol style="list-style-type: none"> 1. Assets and liabilities to be valued 2. Establish clear definition of asset boundaries with generation and distribution entities and measure TSO-disco flows 3. Ownership and contractual structure to be defined. 4. Planning, investment and maintenance procedures to be compiled 	<ol style="list-style-type: none"> 1. No further action required 2. No further action required 3. To be refined under market structure; programme in place. 4. No further action required 	3. Q105
1.3	Legal separation	A	<ol style="list-style-type: none"> 1. Legally or functionally independent TSO required. 2. Need to ensure TSO is able to function independently from other activities of utilities once established. 	<ol style="list-style-type: none"> 1. ESM programme in place. 2. ESM programme in place. 	<ol style="list-style-type: none"> 1. Q404 2. Q404-Q205
1.4	Institution building	A	<ol style="list-style-type: none"> 1. Increase management capability and awareness of the differences between a vertically integrated utility and the new market model 2. Staff recruitment and training needs to commence as well as training of staff in Market Operation. Hold desktop exercises to train and improve confidence of staff in new processes and procedures 	<ol style="list-style-type: none"> 1. ESM programme in place. 2. No programme in place 	<ol style="list-style-type: none"> 1. Q2-Q405 2. Q2-Q405



			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
1.5	Systems integration	A	<ol style="list-style-type: none"> 1. Establish appropriate RTU facilities in all substations 2. Establish full electronic communications between small number of parties to ensure market measurement and settlement systems operate. 3. Establish methods of measurement, control, procurement and monitoring of ancillary services 4. Separate or firewalled IT systems (from MO and/or Utilities) 	<ol style="list-style-type: none"> 1. ESM/MEPSO programme in place 2. ESM/MEPSO programme in place 3. No programme in place 4. MO is currently part of TSO; no programme in place 	<ol style="list-style-type: none"> 1. Q404-Q105 2. Q404-Q105 3. Q2-Q305 4. Q2-Q405
1.6	Technical Requirements	A	<ol style="list-style-type: none"> 1. Establish Technical Standards 2. Available transfer capacity procedures 3. Formalisation of relationships between entities 4. Establish the principles of secured contingencies, quality of supply, transmission system performance, and connection arrangements 5. Establish the principles of a full set of planning procedures including data management, long term system planning, customer service, and procurement and performance of ancillary services 6. Establish the principles of a full set of operational procedures including Grid Code compliance, all operational capability, ancillary services provision and control, contingency planning, and reporting 	<ol style="list-style-type: none"> 1. No programme in place 2. ETSO Pilot Programme in place 3. No programme in place. 4. USAID, EAR and SEETEC TSO support programme will be in place 5. USAID, EAR and SEETEC TSO support programme will be in place 6. USAID, EAR and SEETEC TSO support programme will be in place 	<ol style="list-style-type: none"> 1. Q2-Q305 2. Q404 - Q305 3. Q2-Q305 4. Q3-Q405 5. Q3-Q405 6. Q3-Q405
2. MO					
2.1	Legal & regulatory framework	A	<ol style="list-style-type: none"> 1. Market model to be prepared. 2. Legislation to provide for establishment of or requirement for MO and provide for its roles and responsibilities. 	<ol style="list-style-type: none"> 1. Market model being developed by Hunton Williams. 2. No programme in place 	<ol style="list-style-type: none"> 1. Q404-Q105 2. Q404-Q205
2.2	Institution building	A	<ol style="list-style-type: none"> 1. Structurally or functionally independent management of operations 2. Compliance with regulatory and market requirements 3. Market role definition 	<ol style="list-style-type: none"> 1. Ministry programme in place. 2. No training programme in place 3. Ministry Programme in place in accordance with legislation; awaiting Hunton Williams market design 	<ol style="list-style-type: none"> 1. Q105 2. Q1-Q205 3. Q1-Q205



			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
2.3	Systems integration	A	<ol style="list-style-type: none"> 1. Auditable and transparent settlement calculation procedure (both national and cross border) 2. Clear and confidential information exchange with TSOs 3. Separate or firewalled IT systems (from TSO and/or Utilities) 	<ol style="list-style-type: none"> 1. ESM programme in place 2. ESM programme in place 3. No programme in place 	<ol style="list-style-type: none"> 1. Q404-Q205 2. Q404-Q205 3. Q2-Q405
3. Independent Regulator					
3.1	Legal & regulatory framework	G	<ol style="list-style-type: none"> 1. Independent Regulator required 2. Regulator to be responsible for ensuring non-discrimination, effective competition and the efficient functioning of the market. 	<ol style="list-style-type: none"> 1. No further action required. 2. No further action required 	
3.2	Institution building	G	<ol style="list-style-type: none"> 1. Regulator to agree tariff methodology and licensing procedures. 2. Secure & transparent funding 3. Technical capability to be largely internal rather than largely external 	<ol style="list-style-type: none"> 1. Tariff methodology being established by Regulator 2. No further action required 3. Further institution building support to come from USAID, EAR and SEETEC. 	<ol style="list-style-type: none"> 1. Q404 3. Q404-Q405
3.3	Issue licences	A	<ol style="list-style-type: none"> 1. Regulator should have ability to issue and revoke licences. 2. Licensing procedures to be established. 3. Regulatory structure for licensing of construction of new generation to be finalised. 	<ol style="list-style-type: none"> 1. Programme in place to modify energy law to allow full licensing capability. 2. No further action required. 3. Programme in place to modify energy law to allow full licensing capability. 	<ol style="list-style-type: none"> 1. Q404-Q105 3. Q404-Q105
3.4	Write Grid Code	A	<ol style="list-style-type: none"> 1. Approve Grid Code written by TSO. 2. Establish bulk of the Grid Code including Security and Quality of Supply Standards, Connection Conditions, Planning Code, Operating Codes, Metering Code, Basic Data Registration Code. 	<ol style="list-style-type: none"> 1. Grid code in preparation by EdF and TSO 2. Grid code in preparation by EdF and TSO 	<ol style="list-style-type: none"> 1. Q1-Q205 2. Q2-Q405
3.5	Publish G, T & D tariffs	A	<ol style="list-style-type: none"> 1. Agree tariff methodology, including appropriate returns for industry regulated businesses. 2. Need to agree asset valuation, ownership and long-term investment plans. 3. Government policy required on tariff cross subsidy 4. Calculate G, T and D tariffs according to methodology 	<ol style="list-style-type: none"> 1. ERC programme in place 2. No further action required. 3. Ministry programme in place 4. ERC programme in place 	<ol style="list-style-type: none"> 1. Q404 3. Q404-Q205 4. Q1-Q205
4. Competition for eligible customers					



			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
4.1	Set customer threshold	A	<ol style="list-style-type: none"> 1. Eligible customer threshold to be defined. 2. IT and dispatch systems must be able to handle metering requirements. 	<ol style="list-style-type: none"> 1. Market establishment programme will follow legislation; threshold set 2. SCADA system in place, with metering and billing tender in progress 	<ol style="list-style-type: none"> 1. Q404 2. Q2-Q305
4.2	Switching procedures	A	<ol style="list-style-type: none"> 1. Participants have TPA at TSO and disco voltage levels 2. Develop market rules and notification procedures 3. Set criteria and compile list of eligible customers and suppliers 	<ol style="list-style-type: none"> 1. Ministry programme in place 2. Market model currently being designed by Hunton Williams 3. No programme in place 	<ol style="list-style-type: none"> 1. Q1-Q205 2. Q404-Q205 3. Q2-Q305
5. Third Party Access					
5.1	Legal & regulatory framework	A	<ol style="list-style-type: none"> 1. Third parties to be granted right of access to networks. 2. Grid Code to provide for conditions of such access. 3. Prices for access to be prescribed. 	<ol style="list-style-type: none"> 1. No further action required. 2. Ministry programme in place; awaiting publication of regional Grid Code. 3. Regulator programme in place 	<ol style="list-style-type: none"> 2. Q1-Q205 3. Q404
5.2	CBT participation	G	<ol style="list-style-type: none"> 1. Need to resolve issue of tax payments 2. Extension of CBT to non-TSO participants 3. Allocation methodology of revenues to TSOs 	<ol style="list-style-type: none"> 1. CBT operational improvements ongoing; SETSO to implement. 	<ol style="list-style-type: none"> 1. Q1-Q405
5.3	Grid & interconnector access	R	<ol style="list-style-type: none"> 1. Rules for TPA to interconnectors consistent on either end and for imports and exports 2. Publish available capacity on interconnectors 3. Rules to convert interconnector notified contracted transfers into aggregate interconnector flow 	<ol style="list-style-type: none"> 1. No programme to ensure consistency in place 2. Capacity not currently published 3. Grid code programme in place 	<ol style="list-style-type: none"> 1. Q1-Q205 2. Q1-Q205 3. Q1-Q205
6. Liberalised electricity market					
6.1	Agree market structure	A	<ol style="list-style-type: none"> 1. Agree market structure including number of participants and their commercial links 2. Implement market structure 3. Agree market model including counterparty credit risk, government guarantees and wholesale price exposure. 4. Implement market model 	<ol style="list-style-type: none"> 1. Market model currently being developed by Hunton Williams 2. Ministry programme in place; Electricity Market Law to be passed 3. Market model currently being developed by Hunton Williams 4. Market model currently being developed by Hunton Williams 	<ol style="list-style-type: none"> 1. Q404 2. Q404 3. Q404 4. Q1-Q205



			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
6.2	Write market rules	R	<ol style="list-style-type: none"> 1. Write market rules, including rules to allow participants to enter and leave market 2. Implement market rules including conditions for contracts to be struck, notified and recorded. 3. Define dispute resolution process 	<ol style="list-style-type: none"> 1. No programme in place; awaiting finalised market model 2. No programme in place 3. No programme in place 	<ol style="list-style-type: none"> 1. Q1-Q205 2. Q2-Q305 3. Q2-Q305
6.3	Implement market rules	R	<ol style="list-style-type: none"> 1. Participants must be notified of rights and obligations 2. Monitoring of transactions must be timely and accurate 3. Dispute resolution mechanism should provide for timely and low-cost resolution of disputes through clear mechanism. 	<ol style="list-style-type: none"> 1. No programme in place 2. Monitoring programme not in place 3. Dispute resolution programme not in place 	<ol style="list-style-type: none"> 1. Q2-Q305 2. Q2-Q405 3. Q2-Q305
7. Governance					
7.1	Public Accountability	R	<ol style="list-style-type: none"> 1. Clear reporting mechanisms of Regulator and/or market participants. 2. Public hearings and publication of decisions of Regulator. 3. Published code of ethics of Regulator. 	<ol style="list-style-type: none"> 1. No programme in place. 2. No further action required. 3. No further action required. 	<ol style="list-style-type: none"> 1. Q3-Q405
7.2	Authority	R	<ol style="list-style-type: none"> 1. Regulator requires effective method of enforcement of decisions and ability to impose penalties for failure to comply. 2. Regulator to have ability to influence security of supply policy. 3. Capability of directing sector strategy. 	<ol style="list-style-type: none"> 1. No programme in place.. 2. No programme in place. 3. No further action required. 	<ol style="list-style-type: none"> 1. Q3-Q405 2. Q3-Q405



12 Montenegro – Current position and plans

1. TSO/ISO

The Energy Law 2003 provides for the establishment of a TSO which must be functionally unbundled from the integrated electricity utility. It is expected that functional unbundling will be completed by the end of 2004 with legal unbundling to be undertaken in the second half of 2005.

Consideration is currently being given to whether to establish a TSO or ISO, although it is likely that it will be a TSO. Under the Energy Law the regulator is required to produce rules relating to unbundling. Key issues for unbundling include asset evaluation and allocation of liabilities, which are significant. Transmission system boundaries with the generation and distribution systems are well defined; EPCG have agreed that the 110kV systems and above will be controlled by the TSO.

Montenegro currently has a SCADA system in place, and a new upgrade to allow remote switching should be in place by the end of 2004. All substations will be equipped with RTU's which should make them adequate for initial market operation. Information is provided to EKC on interconnector flows.

Planning standards appear to be established. Planning studies are carried out as required although the last detailed study was in 1997. Some work is required to establish a full set of standards.

Net transfer capacities are published by ETSO seasonally but this process would be refined if it were to participate in co-ordinated auction (CA) method of allocating transfer capacity. Montenegro was also included in the CBT trial and live mechanisms during 2004.

Although security and quality of supply, transmission system performance and connection arrangements are understood, most are not well documented. The principles need to be established commensurate with the Grid Code and licences.

Similarly, there are no formal planning or operational procedures although many of the principles are understood by custom and practise. A full set of principles needs to be established commensurate with the Grid Code and the Licence.

Ancillary services requirements, especially reactive power reserve for voltage control are, at present, not regularly calculated although the utility is capable of doing in collaboration with EKC. The process needs to be implemented and formalised.

2. MO

The MO will be part of the TSO once the TSO is established

3. Independent Regulator

The Energy Regulatory Authority (ERA) was established in January 2004 pursuant to the Energy Law. ERA is an independent organisation, funded by licence fees. ERA has issued six temporary licences to EPCG for generation, transmission, TSO, distribution (including DSO) and supply with the intention that these should provide the framework for moving toward functional unbundling. An interim Grid Code has been prepared and should be approved by end-2004. This will need to be aligned with the market rules once prepared, and then finalised.

4. Competition for eligible customers

The Energy Law provides for the regulator to make secondary legislation to facilitate the establishment of a market. In practice, while the largest customer currently sources a third of its needs through imports, it is not expected that the right to freely purchase electricity, even once the regulator has promulgated the necessary secondary legislation, will be exercised by many customers as franchise electricity is comparatively inexpensive in Montenegro.

5. Third Party Access

The Energy Law grants producers and suppliers the right to non-discriminatory, regulated access to the transmission and distribution networks in accordance with regulations established by the regulator. The tariff methodology for connection to the network is to be prepared by EPCG and approved by the regulator. The regulator is also to prepare the use of system tariff methodology. It is expected that these tariff



methodologies will be completed by the end of 2004. Tariffs, which must be approved by the regulator, will then be adopted based on these methodologies.

6. Market Rules

The MO is to prepare market rules once it is established. There is no intention to establish a functioning national market in Montenegro because of the size of the system, although a market consistent with regional proposals is expected to be developed. Development of the

national market is delayed until the regional market is more clearly defined.

7. Governance

The Energy Law provides for the regulator to ensure that information relating to the energy sector is made publicly available. Rules of procedure to provide for public consultations and publication of decisions of the regulator are in place. Legislation grants state bodies the authority to impose fines for failure to comply with regulations issued by regulator or non-compliance by an entity with provision of licence, but the regulator himself does not have these powers.



Initial Regional Market Requirements to be fulfilled

		Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
1. TSO/ISO				
1.1	Legal & regulatory framework	G	<ol style="list-style-type: none"> 1. Legislation requiring or establishing legally or functionally separate TSO required. 2. TSO to be responsible for managing energy flows, ability of system to meet demand, non-discrimination between system users, security of supply and providing information to the TSOs of interconnected systems. 	<ol style="list-style-type: none"> 1. No further action required. 2. No further action required.
1.2	Asset separation	A	<ol style="list-style-type: none"> 1. Assets and liabilities to be valued 2. Establish clear definition of asset boundaries with generation and distribution entities and measure TSO-disco flows 3. Ownership and contractual structure to be established 4. Planning, investment and maintenance procedures to be compiled 	<ol style="list-style-type: none"> 1. USAID programme in place. 2. No boundary codification or boundary metering programme in place. 3. Awaiting market definition. No programme in place. 4. No programme in place.
1.3	Legal separation	A	<ol style="list-style-type: none"> 1. Legally or functionally independent TSO required. 2. Need to ensure TSO is able to function independently from other activities of Utility once established. 	<ol style="list-style-type: none"> 1. No further action required. 2. EPCG programme in place
1.4	Institution building	R	<ol style="list-style-type: none"> 1. Increase management capability and awareness of the differences between a vertically integrated utility and the new market model 2. Staff recruitment and training needs to commence as well as training of staff in Market Operation. Hold desktop exercises to train and improve confidence of staff in new processes and procedures 	<ol style="list-style-type: none"> 1. No programme in place. 2. No programme in place.



			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
1.5	Systems integration	A	<ol style="list-style-type: none"> 1. Establish appropriate RTU facilities in all substations 2. Establish full electronic communications between small number of parties to ensure market measurement and settlement systems operate. 3. Establish methods of measurement, control, procurement and monitoring of ancillary services 4. Separate or firewalled IT systems (from MO and/or Utilities) 	<ol style="list-style-type: none"> 1. No further action required. 2. Finalise upgrade. EPCG programme in place. 3. Codification of existing procedures required. No programme in place 4. No programme in place 	<ol style="list-style-type: none"> 2. Q204-Q405 3. Q2-Q405 4. Q2-Q405
1.6	Technical Requirements	R	<ol style="list-style-type: none"> 1. Establish Technical Standards 2. Available transfer capacity procedures 3. Formalisation of relationships between entities 4. Establish the principles of secured contingencies, quality of supply, transmission system performance, and connection arrangements 5. Establish the principles of a full set of planning procedures including data management, long term system planning, customer service, and procurement and performance of ancillary services 6. Establish the principles of a full set of operational procedures including Grid Code compliance, all operational capability, ancillary services provision and control, contingency planning, and reporting 	<ol style="list-style-type: none"> 1. No programme in place. 2. ETSO Pilot Programme in place. 3. No programme in place. 4. Codify and complete existing; no programme in place 5. Codify and complete existing; no programme in place 6. Codify and complete existing; no programme in place 	<ol style="list-style-type: none"> 1. Q2-Q305 2. Q404-Q305 3. Q1-Q205 4. Q3-Q405 5. Q3-Q405 6. Q3-Q405
2. MO					
2.1	Legal & regulatory framework	G	<ol style="list-style-type: none"> 1. Market model to be prepared. 2. Legislation to provide for establishment of or requirement for MO and provide for its roles and responsibilities. 	<ol style="list-style-type: none"> 1. No further action required. 2. No further action required. 	
2.2	Institution building	A	<ol style="list-style-type: none"> 1. Structurally or functionally independent management of operations 2. Compliance with regulatory and market requirements 3. Market role definition 	<ol style="list-style-type: none"> 1. EPCG programme in place to create TSO. 2. No programme in place. 3. Awaiting market structure; no programme in place. 	<ol style="list-style-type: none"> 1. Q404-Q205 2. Q2-Q305 3. Q2-Q305



			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
2.3	Systems integration	R	<ol style="list-style-type: none"> 1. Auditable and transparent settlement calculation procedure (both national and cross border) 2. Clear and confidential information exchange with TSOs 3. Separate or firewalled IT systems (from TSO and/or Utilities) 	<ol style="list-style-type: none"> 1. No programme in place 2. SCADA system in place but needs updating; no programme in place 3. No programme in place 	<ol style="list-style-type: none"> 1. Q3-Q405 2. Q3-Q405 3. Q3-Q405
3. Independent Regulator					
3.1	Legal & regulatory framework	G	<ol style="list-style-type: none"> 1. Independent Regulator required 2. Regulator to be responsible for ensuring non-discrimination, effective competition and the efficient functioning of the market. 	<ol style="list-style-type: none"> 1. No further action required 2. Largely in place; Ministry programme in place give interconnector capacity allocation role to regulator. 	
3.2	Institution building	A	<ol style="list-style-type: none"> 1. Regulator to agree tariff methodology and licensing procedures. 2. Secure & transparent funding 3. Technical capability to be largely internal rather than largely external 	<ol style="list-style-type: none"> 1. No further action required 2. No further action required 3. USAID regulator capacity building programme ongoing. 	<ol style="list-style-type: none"> 3. Q404-Q305
3.3	Issue licences	A	<ol style="list-style-type: none"> 1. Regulator should have ability to issue and revoke licences. 2. Licensing procedures to be established. 3. Regulatory structure for licensing of construction of new generation to be finalised. 	<ol style="list-style-type: none"> 1. No further action required 2. Only Temporary licenses have been issued. Regulator programme in place to issue full licenses 3. No further action required 	<ol style="list-style-type: none"> 2. Q2-Q405
3.4	Write Grid Code	A	<ol style="list-style-type: none"> 1. Approve Grid Code written by TSO. 2. Establish bulk of the Grid Code including Security and Quality of Supply Standards, Connection Conditions, Planning Code, Operating Codes, Metering Code, Basic Data Registration Code. 	<ol style="list-style-type: none"> 1. Draft grid code written; programme in place to approve 2. Draft grid code written; programme in place to approve 	<ol style="list-style-type: none"> 1. Q404-Q105 2. Q404-Q105
3.5	Publish G, T & D tariffs	A	<ol style="list-style-type: none"> 1. Agree tariff methodology, including appropriate returns for industry regulated businesses. 2. Need to agree asset valuation, ownership and long-term investment plans. 3. Government policy required on tariff cross subsidy 4. Calculate G, T and D tariffs according to methodology 	<ol style="list-style-type: none"> 1. Methodology being prepared by EPCG for approval by ERA 2. USAID asset valuation programme in place 3. Hunton Williams programme in place 4. Programme in place 	<ol style="list-style-type: none"> 1. Q404-Q105 2. Q404-Q205 3. Q404-Q405 4. Q1-Q205
4. Competition for eligible customers					



			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
4.1	Set customer threshold	A	<ol style="list-style-type: none"> 1. Eligible customer threshold to be defined. 2. IT and dispatch systems must be able to handle metering requirements. 	<ol style="list-style-type: none"> 1. Regulator passing secondary legislation; programme in place. 2. EPCG metering programme in place. 	<ol style="list-style-type: none"> 1. Q404-Q205 2. Q404-Q405
4.2	Switching procedures	R	<ol style="list-style-type: none"> 1. Participants have TPA at TSO and disco voltage levels 2. Develop market rules and notification procedures 3. Set criteria and compile list of eligible customers and suppliers 	<ol style="list-style-type: none"> 1. No programme in place 2. No programme in place 3. No programme in place 	<ol style="list-style-type: none"> 1. Q2-Q305 2. Q404-Q205 3. Q3-Q405
5. Third Party Access					
5.1	Legal & regulatory framework	A	<ol style="list-style-type: none"> 1. Third parties to be granted right of access to networks. 2. Grid Code to provide for conditions of such access. 3. Prices for access to be prescribed. 	<ol style="list-style-type: none"> 1. No further action required 2. EPCG and ERA programme in place. 3. EPCG and ERA programme in place. 	<ol style="list-style-type: none"> 2. Q404-Q205 3. Q404-Q205
5.2	CBT participation	A	<ol style="list-style-type: none"> 1. Need to resolve issue of tax payments 2. Extension of CBT to non-TSO participants 3. Allocation methodology of revenues to TSOs 	<ol style="list-style-type: none"> 1. SETSO to implement 1-3; Montenegro to join CBT in H105 	<ol style="list-style-type: none"> 1. Q1-Q405 2. Q1-Q405 3. Q1-Q405
5.3	Grid & interconnector access	A	<ol style="list-style-type: none"> 1. Rules for TPA to interconnectors consistent on either end and for imports and exports 2. Publish available capacity on interconnectors 3. Rules to convert interconnector notified contracted transfers into aggregate interconnector flow 	<ol style="list-style-type: none"> 1. No further action required 2. EPCG and ERA programme in place. 3. No programme in place. 	<ol style="list-style-type: none"> 2. Q1-Q205 3. Q1-Q205
6. Liberalised electricity market					
6.1	Agree market structure	R	<ol style="list-style-type: none"> 1. Agree market structure including number of participants and their commercial links 2. Implement market structure 3. Agree market model including counterparty credit risk, government guarantees and wholesale price exposure. 4. Implement market model 	<ol style="list-style-type: none"> 1. Awaiting regional market definition; no programme in place 2. No programme in place. 3. No programme in place. 4. No programme in place. 	<ol style="list-style-type: none"> 1. Q2-Q405 2. Q2-Q405 3. Q2-Q405 4. Q2-Q405



			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
6.2	Write market rules	R	<ol style="list-style-type: none"> 1. Write market rules, including rules to allow participants to enter and leave market 2. Implement market rules including conditions for contracts to be struck, notified and recorded. 3. Define dispute resolution process 	<ol style="list-style-type: none"> 1. No programme in place. 2. No programme in place. 3. No programme in place. 	<ol style="list-style-type: none"> 1. Q2-Q405 2. Q2-Q405 3. Q2-Q405
6.3	Implement market rules	R	<ol style="list-style-type: none"> 1. Participants must be notified of rights and obligations 2. Monitoring of transactions must be timely and accurate 3. Dispute resolution mechanism should provide for timely and low-cost resolution of disputes through clear mechanism. 	<ol style="list-style-type: none"> 1. No programme in place. 2. No programme in place. 3. No programme in place. 	<ol style="list-style-type: none"> 1. Q2-Q405 2. Q2-Q405 3. Q2-Q405
7. Governance					
7.1	Public Accountability	G	<ol style="list-style-type: none"> 1. Clear reporting mechanisms of Regulator and market participants. 2. Public hearings and publication of decisions of Regulator. 3. Published code of ethics of Regulator. 	<ol style="list-style-type: none"> 1. No further action required 2. No further action required 3. No further action required 	
7.2	Authority	R	<ol style="list-style-type: none"> 1. Regulator requires effective method of enforcement of decisions and ability to impose penalties for failure to comply. 2. Regulator to have ability to influence security of supply policy. 3. Capability of directing sector strategy. 	<ol style="list-style-type: none"> 1. No programme in place 2. No programme in place 3. No further action required 	<ol style="list-style-type: none"> 1. Q3-Q405 2. Q3-Q405



13 Serbia – Current position and plans

1. TSO/ISO

According to the Energy Law passed on August 1st 2004, the Government will issue an act of foundation of a TSMO by 1 February 2005. It is expected that it may take some time for practical establishment of the TSMO. EAR funding has been secured to provide for the establishment of the TSMO. Consultants are currently being considered and will be appointed in early 2005 to assist in the establishment of the TSMO, including drafting of the market rules and the Grid Code. The TSMO will be legally and functionally separate from other energy related activities and will be wholly owned by the State. The TSMO should be fully operational by the end of 2005.

The TSMO is charged with drafting connection, technical and safety rules for the network, which must be approved by the regulatory agency.

EPS is currently dividing its assets to form a completely separate TSMO company, which will have all transmission assets and liabilities transferred to it by February 2005. Transmission system boundaries with the generation and distribution systems are well defined. A register of assets is already in existence and valuation is underway. Separate generation, transmission and distribution, metering and organisational structures remain from before the merger of these functions in 1990, and so the transition may be smoother than in other jurisdictions.

A new SCADA/EMS system should be in place by the end of 2007, which will include installation of missing RTUs but is lacking market functionality as the market is yet to be defined. Appropriate RTU facilities will be available by the end of 2007.

There appears to be sufficient qualified staff, staff skills and training. Further skills will need to be added in the lead to initial market operation and to adequately respond to further market developments. Desktop exercises to train and improve confidence of staff in new processes and procedures will be required.

Planning standards appear to be quite sophisticated and well established. Planning studies are carried out for the utility by the Nikola Tesla Institute Belgrade as well as the utility research department based on clear economic and financial criteria. Some fine tuning is required to codify what is already done.

Net transfer capacities are published by ETSO seasonally. There is a future need to participate in the co-ordinated auction (CA) method of allocating transfer capacity. Serbia is a participant in the CBT scheme; trial and live mechanisms were implemented during 2004.

Most of the principles of secured contingencies, quality of supply, transmission system performance, and connection arrangements are well understood but need to be codified, codified and additional aspects included commensurate with the terms of the Grid Code and Licence.

Many principles of planning and operational procedures are well established through a set of rulebooks but these need to be codified and added to commensurate with the terms of the Grid Code and Licence

2. MO

In Serbia, the MO is expected to form part of the TSO. The MO is defined in the Energy Law as the market administrator liable for operating the system of power sale and purchase in accordance with market business conditions, as well as for the development of the organised electricity market.

3. Independent Regulator

Energy Law provides for an independent regulatory agency to be established by end 2004. The regulatory agency is to be in place at the start of 2005, with help from CARDS funding, for the first two years of operation. KEMA will act as consultant to the regulator for the first two years of its operation and will also undertake staff training. A number of staff have been trained in advance of the formal establishment of the regulatory agency (in particular with regard to price regulation and



licensing). The regulatory agency will be funded by way of licence fees and revenue obtained through activities and by way of charges.

The Government currently approves prices and will continue to approve them in the short term. When the regulatory agency is established, it will establish tariff methodologies and will undertake a monitoring role in relation to prices. The regulatory agency will also be responsible for issuing and revoking licences for generation, transmission, distribution, trade and organisation of market. The law also provides for an energy permit to be required for the construction of power plants in excess of 1MW, except where the right to construct is acquired through concession or public tender

4. Competition for eligible customers

The Energy Law defines eligible customers to be above 25GWh annual consumption, which amounts to about 30 customers. However, some of these are state owned firms with special social tariffs which may mean that in practice only a small number of state and privatised companies are likely to become eligible. The Energy Law gives the right to eligible customers within Serbia to contract with any supplier inside or outside Serbia. One of the tasks of the regulator, once established, will be to prepare a roadmap for market opening.

5. Third Party Access

The TSO and DSO, when established, are required under the Energy Law to allow regulated access to third parties on principles of transparency and non-discrimination. The regulatory agency will have responsibility for determining methodologies for access charges and determining disputes over access. The practicalities of third party access

will be provided for in the Grid Code, which is being compiled in conjunction with institutional support programs for the TSMO.

6. Market Rules

According to the Energy Law market rules are being developed by the MO. EAR support will assist in developing market design and market rules. The market rules will be approved by the regulator, with help from KEMA. Rules for auction of interconnector capacity are also to be developed.

7. Governance

The Energy Law sets out functions of the regulator and grants the Minister substantial powers to review regulator's decisions which could involve the ministry excessively in day-to-day market operation. The Regulator has been given the authority to grant licences and decide on access and connection issues, although decisions are appealable to the Minister rather than the courts. Therefore the ministry has considerable influence over the market.

The TSO is required to prepare and submit information on system availability, reserves and requirements of facilities to the regulator. The regulator will need to establish rules and procedures relating to its responsibilities, including procedures for making decisions, and establish a code of ethics. Fines will be imposed by commercial courts for industrial offences and it is not clear that the regulator will have the power to impose fines for breach of licence.



Initial Regional Market Requirements to be fulfilled

			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
1. TSO/ISO					
1.1	Legal & regulatory framework	G	<ol style="list-style-type: none"> 1. Legislation requiring or establishing legally or functionally separate TSO required. 2. TSO to be responsible for managing energy flows, ability of system to meet demand, non-discrimination between system users, security of supply and providing information to the TSOs of interconnected systems. 	<ol style="list-style-type: none"> 1. Law in place, but further legislative action required by government; programme in place. 2. No further action required. 	<ol style="list-style-type: none"> 1. Q105
1.2	Asset separation	A	<ol style="list-style-type: none"> 1. Assets and liabilities to be valued 2. Establish clear definition of asset boundaries with generation and distribution entities and measure TSO-disco flows 3. Ownership and contractual structure to be established 4. Planning, investment and maintenance procedures to be compiled 	<ol style="list-style-type: none"> 1. EPS programme in place; support from local consultant 2. No boundary codification or boundary metering programme in place. 3. EAR funded TSMO programme in place 4. No programme in place. 	<ol style="list-style-type: none"> 1. Q404-Q105 2. Q205-Q305 3. Q205-Q305 4. Q205-Q405
1.3	Legal separation	A	<ol style="list-style-type: none"> 1. Legally or functionally independent TSO required. 2. Need to ensure TSO is able to function independently from other activities of Utility once established. 	<ol style="list-style-type: none"> 1. Law in place, but further legislative action required by government; programme in place. 2. EPS programme in place to unbundle; EAR programme in place to legally separate 	<ol style="list-style-type: none"> 1. Q105 2. Q404-Q205
1.4	Institution building	A	<ol style="list-style-type: none"> 1. Increase management capability and awareness of the differences between a vertically integrated utility and the new market model 2. Staff recruitment and training needs to commence as well as training of staff in Market Operation. Hold desktop exercises to train and improve confidence of staff in new processes and procedures 	<ol style="list-style-type: none"> 1. EPS internal programme in place; consultants being retained. 2. EPS internal programme in place; consultants being retained. 	<ol style="list-style-type: none"> 1. Q404-Q205 2. Q404-Q205



			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
1.5	Systems integration	A	<ol style="list-style-type: none"> 1. Establish appropriate RTU facilities in all substations 2. Establish full electronic communications between small number of parties to ensure market measurement and settlement systems operate. 3. Establish methods of measurement, control, procurement and monitoring of ancillary services 4. Separate or firewalled IT systems (from MO and/or Utilities) 	<ol style="list-style-type: none"> 1. Programme in place (for full REM) 2. EPS SCADA/EMS programme in place. 3. Codification of existing procedures required. TSMO programme in place 4. No programme in place 	<ol style="list-style-type: none"> 1. Q107 2. Q404-Q205 3. Q2-Q405 4. Q2-Q405
1.6	Technical Requirements	A	<ol style="list-style-type: none"> 1. Establish Technical Standards 2. Available transfer capacity procedures 3. Formalisation of relationships between entities 4. Establish the principles of secured contingencies, quality of supply, transmission system performance, and connection arrangements 5. Establish the principles of a full set of planning procedures including data management, long term system planning, customer service, and procurement and performance of ancillary services 6. Establish the principles of a full set of operational procedures including Grid Code compliance, all operational capability, ancillary services provision and control, contingency planning, and reporting 	<ol style="list-style-type: none"> 1. TSMO programme in place. 2. ETSO Pilot Programme in place. 3. TSMO programme in place. 4. Codify and complete existing; TSMO programme in place 5. Codify and complete existing; TSMO programme in place 6. Codify and complete existing; TSMO programme in place 	<ol style="list-style-type: none"> 1. Q2-Q305 2. Q404-Q305 3. Q1-Q205 4. Q3-Q405 5. Q3-Q405 6. Q3-Q405
2. MO					
2.1	Legal & regulatory framework	A	<ol style="list-style-type: none"> 1. Market model to be prepared. 2. Legislation to provide for establishment of or requirement for MO and provide for its roles and responsibilities. 	<ol style="list-style-type: none"> 1. TSMO programme in place. 2. No further action required. 	<ol style="list-style-type: none"> 1. Q2-Q405
2.2	Institution building	A	<ol style="list-style-type: none"> 1. Structurally or functionally independent management of operations 2. Compliance with regulatory and market requirements 3. Market role definition 	<ol style="list-style-type: none"> 1. EPS internal programme in place; consultants being retained. 2. EPS internal programme in place; consultants being retained. 3. Awaiting market structure; no programme in place. 	<ol style="list-style-type: none"> 1. Q2-Q405 2. Q2-Q405 3. Q3-Q405



			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
2.3	Systems integration	R	<ol style="list-style-type: none"> 1. Auditable and transparent settlement calculation procedure (both national and cross border) 2. Clear and confidential information exchange with TSOs 3. Separate or firewalled IT systems (from TSO and/or Utilities) 	<ol style="list-style-type: none"> 1. TSMO programme in place 2. SCADA system in place but needs updating; no programme in place 3. No programme in place 	<ol style="list-style-type: none"> 1. Q3-Q405 2. Q3-Q405 3. Q3-Q405
3. Independent Regulator					
3.1	Legal & regulatory framework	A	<ol style="list-style-type: none"> 1. Independent Regulator required 2. Regulator to be responsible for ensuring non-discrimination, effective competition and the efficient functioning of the market. 	<ol style="list-style-type: none"> 1. Programme in place; KEMA assisting. 2. No further action required 	<ol style="list-style-type: none"> 1. Q1-Q205
3.2	Institution building	A	<ol style="list-style-type: none"> 1. Regulator to agree tariff methodology and licensing procedures. 2. Secure & transparent funding 3. Technical capability to be largely internal rather than largely external 	<ol style="list-style-type: none"> 1. Programme in place; KEMA assisting. 2. No further action required 3. Programme in place; KEMA assisting. 	<ol style="list-style-type: none"> 1. Q1-Q205 3. Q1-Q205
3.3	Issue licences	A	<ol style="list-style-type: none"> 1. Regulator should have ability to issue and revoke licences. 2. Licensing procedures to be established. 3. Regulatory structure for licensing of construction of new generation to be finalised. 	<ol style="list-style-type: none"> 1. No further action required 2. Programme in place; KEMA assisting. 3. No further action required 	<ol style="list-style-type: none"> 2. Q2-Q405
3.4	Write Grid Code	A	<ol style="list-style-type: none"> 1. Approve Grid Code written by TSO. 2. Establish bulk of the Grid Code including Security and Quality of Supply Standards, Connection Conditions, Planning Code, Operating Codes, Basic Data Registration Code. 	<ol style="list-style-type: none"> 1. TSMO programme in place; support from KEMA 2. TSMO programme in place; support from KEMA 	<ol style="list-style-type: none"> 1. Q2-Q305 2. Q2-Q305
3.5	Publish G, T & D tariffs	A	<ol style="list-style-type: none"> 1. Agree tariff methodology, including appropriate returns for industry regulated businesses. 2. Need to agree asset valuation, ownership and long-term investment plans. 3. Government policy required on tariff cross subsidy 4. Calculate G, T and D tariffs according to methodology 	<ol style="list-style-type: none"> 1. EPS/TSMO programme in place to calculate and submit to regulator; support from KEMA 2. Programme in place 3. No programme in place 4. EPS/TSMO programme in place to calculate and submit to regulator; support from KEMA 	<ol style="list-style-type: none"> 1. Q1-Q205 3. Q2-Q405 4. Q1-Q205
4. Competition for eligible customers					



			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
4.1	Set customer threshold	G	<ol style="list-style-type: none"> 1. Eligible customer threshold to be defined. 2. IT and dispatch systems must be able to handle metering requirements. 	<ol style="list-style-type: none"> 1. No further action required. 2. New SCADA EMS system being implemented which will increase number of metered customers. 	<ol style="list-style-type: none"> 2. Ongoing
4.2	Switching procedures	A	<ol style="list-style-type: none"> 1. Participants have TPA at TSO and disco voltage levels 2. Develop market rules and notification procedures 3. Set criteria and compile list of eligible customers and suppliers 	<ol style="list-style-type: none"> 1. No further action required. 2. TSMO programme in place. 3. Programme in place; assistance from KEMA 	<ol style="list-style-type: none"> 2. Q2-Q405 3. Q2-Q405
5. Third Party Access					
5.1	Legal & regulatory framework	A	<ol style="list-style-type: none"> 1. Third parties to be granted right of access to networks. 2. Grid Code to provide for conditions of such access. 3. Prices for access to be prescribed. 	<ol style="list-style-type: none"> 1. No further action required 2. TSMO Programme in place 3. EPS/TSMO programme in place to calculate and submit to regulator. 	<ol style="list-style-type: none"> 1. Q2-Q305 2. Q1-Q205
5.2	CBT participation	G	<ol style="list-style-type: none"> 1. Need to resolve issue of tax payments 2. Extension of CBT to non-TSO participants 3. Allocation methodology of revenues to TSOs 	<ol style="list-style-type: none"> 1. SETSO to implement 1-3. 	<ol style="list-style-type: none"> 1. Ongoing
5.3	Grid & interconnector access	R	<ol style="list-style-type: none"> 1. Rules for TPA to interconnectors consistent on either end and for imports and exports 2. Publish available capacity on interconnectors 3. Rules to convert interconnector notified contracted transfers into aggregate interconnector flow 	<ol style="list-style-type: none"> 1. TSMO programme in place. 2. Indicative capacities published, in accordance with ETSO rules 3. No programme in place. 	<ol style="list-style-type: none"> 1. Q2-Q305 2. Q2-Q305 3. Q2-Q305
6. Liberalised electricity market					
6.1	Agree market structure	A	<ol style="list-style-type: none"> 1. Agree market structure including number of participants and their commercial links 2. Implement market structure 3. Agree market model including counterparty credit risk, government guarantees and wholesale price exposure. 4. Implement market model 	<ol style="list-style-type: none"> 1. Ministry programme in place, supported by EAR-financed twinning programme; KEMA assistance 2. Deadlines set in Energy Law 3. Programme in place; KEMA assistance 4. Deadlines set in Energy Law 	<ol style="list-style-type: none"> 1. Q1-Q205 2. Q1-Q205 3. Q1-Q205 4. Q1-Q205
6.2	Write market rules	A	<ol style="list-style-type: none"> 1. Write market rules, including rules to allow participants to enter and leave market 2. Implement market rules including conditions for contracts to be struck, notified and recorded. 3. Define dispute resolution process 	<ol style="list-style-type: none"> 1. TSMO programme in place. 2. No programme in place. 3. TSMO programme in place. 	<ol style="list-style-type: none"> 1. Q1-Q205 2. Q1-Q205 3. Q1-Q205



			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
6.3	Implement market rules	A	<ol style="list-style-type: none"> Participants must be notified of rights and obligations Monitoring of transactions must be timely and accurate Dispute resolution mechanism should provide for timely and low-cost resolution of disputes through clear mechanism. 	<ol style="list-style-type: none"> TSMO programme in place; market rules yet to be approved TSMO programme in place; market rules yet to be approved TSMO programme in place; market rules yet to be approved 	<ol style="list-style-type: none"> Q2-Q405 Q2-Q405 Q2-Q405
7. Governance					
7.1	Public Accountability	R	<ol style="list-style-type: none"> Clear reporting mechanisms of Regulator and market participants. Public hearings and publication of decisions of Regulator. Published code of ethics of Regulator. 	<ol style="list-style-type: none"> No programme in place; regulator to implement when established. No programme in place; regulator to implement when established. No programme in place; regulator to implement when established. 	<ol style="list-style-type: none"> Q2-Q305 Q2-Q305 Q2-Q305
7.2	Authority	R	<ol style="list-style-type: none"> Regulator requires effective method of enforcement of decisions and ability to impose penalties for failure to comply. Regulator to have ability to influence security of supply policy. Capability of directing sector strategy. 	<ol style="list-style-type: none"> No programme in place No programme in place No programme in place 	<ol style="list-style-type: none"> Q3-Q405 Q3-Q405 Q3-Q405



14 UNMIK – Current position and plans

1. TSO/ISO

On 3 November 2004 the Government nominated KEK as the TSO and DSO. KEK is split into six divisions, three of which are the transmission division, the distribution division and the generation division. The other three divisions are the coal division, a managerial services division and a non-energy related activities division. Although it is probable that an independent TSO will be established, and this is currently being studied by SEETEC, the transmission division of KEK will undertake the transmission operation activity in the meantime. The TSO, when established, is required by legislation to be independent from KEK. The TSO will be licensed when the regulator has established its licensing procedures and the Government has nominated a TSO.

The KEK asset register and valuation has been completed and the boundary between the transmission business and the other operations of KEK has been largely determined. It is anticipated that a separate, publicly-owned body will retain ownership of the assets and the TSO will simply operate the system. Further infrastructure development, such as a new dispatch centre, is required.

A mini SCADA is being commissioned which is expected to be in place for initial market operation but is unlikely to be able to cope with market functions. There is a new SCADA/EMS project supported by the World Bank which will be capable to include all necessary technical and market functionality.

There appears to be sufficient qualified staff, staff skills and training. Further skills will need to be added in the lead to initial market operation and to adequately respond to further market developments. There is a need to hold desktop exercises to train and improve confidence of staff in new processes and procedures

Planning standards appear to be well established. Planning studies are carried out by the utility based on clear economic and financial criteria. Some fine tuning is required to codify what is already done.

KEK has not played any part in the CBT trials or live application, nor in the work on co-ordinated auction of transmission capacity.

Most of the principles of security, quality of supply, transmission system performance, and connection arrangements are well understood but need to be codified, and additional aspects included commensurate with the terms of the Grid Code and Licence

Many principles of planning procedures including data management, long term system planning, customer service, and procurement and performance of ancillary services are well established through a set of rulebooks but these need to be codified and added to commensurate with the terms of the Grid Code and Licence

Many principles of a full set of operational procedures including Grid Code compliance, all operational capability, ancillary services provision are well established through documented regulations and instructions but these need to be codified and added to commensurate with the terms of the Grid Code and Licence

2. MO

There is currently no market operator in UNMIK. Although a decision has yet to be made, it is likely that the market operator will be part of the TSO. The regulator is currently working with the transmission division on developing market rules and the grid code.

3. Independent Regulator

The Energy Regulatory Office (ERO) was established in September 2003, although laws passed in June 2004 provided for further operations of the Regulator and the establishment of its board. The board of ERO has currently not been established; approval of the board members nominated on the UNMIK side has been delayed until end of 2004 because of elections. ERO is financed from fees and donations, and by way of appropriation from the UNMIK budget during formation period. An USAID project is underway to assist in the development of licensing rules



and procedures and development of the rules on pricing and tariffs is part of the remit of an EAR supported project.

4. Competition for eligible customers

There is currently no market in UNMIK. The Ministry is required pursuant to the Law on Electricity to prescribe the conditions for determining who is an eligible customer every year. A draft of secondary legislation related to market opening has been prepared. This provides that the first stage of market opening will commence in 2006, when all customers connected to 35kV or higher will have eligible customer status. A decision was made not to classify customers as eligible or non-eligible depending on consumption, but rather on voltage level, (because there are some large customers that are currently not operating but should be an eligible customer (such as some mines)). It is expected that the market will be opened to all non-domestic customers in 2010 and then full market opening will follow in 2012.

5. Third Party Access

The TSO and DSOs are required to allow generators, suppliers and eligible customers who meet the conditions for connection access to the network on the basis of network operator rules and regulations. The price for use of the networks will be proposed by the relevant network operators every year and approved by the regulator. Implementation of TPA is awaiting establishment of the TSO and preparation of secondary legislation and relevant codes setting out rules and regulations for connection. The Grid Code is to be drafted by TSO and submitted to the regulator for approval. It is expected that a World Bank funded project

will assist in the drafting of the Grid Code. TPA allocation will be conducted by ERO, possibly by auction process.

6. Market Rules

There are currently no market rules in place, although there are plans to develop them once the TSO is established.

7. Governance

Legislation provides for the roles and responsibilities of the regulator. National administrative or constitutional law will provide for enforcement of separation of tasks and responsibilities. The Law provides for the regulator to be responsible for resolving disputes among customers and energy enterprises. The regulator is required to prepare rules on dispute resolution procedures within three months of the establishment of the board (expected by December 2004). It is anticipated that a programme funded by EU Pillar will assist in preparation of these rules.

The regulator has the power to require information from any energy entity or public authority necessary to fulfil its job. There is no specific obligation for publication of such information. A regulatory manual of operations, statutes and ethics is being prepared, with assistance provided by a USAID funded programme. The regulator is responsible for supervising compliance with terms and conditions of licences and all prices and tariffs and decisions issued to licensees. The regulator will have power to revoke licences and impose fines for non-compliance.



Initial Regional Market Requirements to be fulfilled

		Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales	
1. TSO/ISO					
1.1	Legal & regulatory framework	G	<ol style="list-style-type: none"> 1. Legislation requiring or establishing legally or functionally separate TSO required. 2. TSO to be responsible for managing energy flows, ability of system to meet demand, non-discrimination between system users, security of supply and providing information to the TSOs of interconnected systems. 	<ol style="list-style-type: none"> 1. No further action is required. 2. No further action is required. 	
1.2	Asset separation	A	<ol style="list-style-type: none"> 1. Assets and liabilities to be valued 2. Establish clear definition of asset boundaries with generation and distribution entities and measure TSO-disco flows 3. Ownership and contractual structure to be defined. 4. Planning, investment and maintenance procedures to be compiled 	<ol style="list-style-type: none"> 1. No further action required 2. No further action required 3. Blueprint for structure and ownership agreed with SEETEC, implementation under ESTAP III study 4. No programme in place 	<ol style="list-style-type: none"> 3. Q1-Q305 4. Q2-Q405
1.3	Legal separation	A	<ol style="list-style-type: none"> 1. Legally or functionally independent TSO required. 2. Need to ensure TSO is able to function independently from other activities of utilities once established. 	<ol style="list-style-type: none"> 1. TSO separation programme in place. SEETEC providing support. 2. No further action required. 	<ol style="list-style-type: none"> 1. Q205
1.4	Institution building	A	<ol style="list-style-type: none"> 1. Increase management capability and awareness of the differences between a vertically integrated utility and the new market model 2. Staff recruitment and training needs to commence as well as training of staff in Market Operation. Hold desktop exercises to train and improve confidence of staff in new processes and procedures 	<ol style="list-style-type: none"> 1. Training of managers in market operation required 2. No programme in place. 	<ol style="list-style-type: none"> 1. Q2-Q405 2. Q2-Q405



			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
1.5	Systems integration	A	<ol style="list-style-type: none"> 1. Establish appropriate RTU facilities in all substations 2. Establish full electronic communications between small number of parties to ensure market measurement and settlement systems operate. 3. Establish methods of measurement, control, procurement and monitoring of ancillary services 4. Separate or firewalled IT systems (from MO and/or Utilities) 	<ol style="list-style-type: none"> 1. No further action required. 2. KEK mini-SCADA and SCADA EMS programme in place 3. No programme in place 4. No programme in place 	<ol style="list-style-type: none"> 2. Q404-Q405 3. Q3-Q405 4. Q3-Q405
1.6	Technical Requirements	R	<ol style="list-style-type: none"> 1. Establish Technical Standards 2. Available transfer capacity procedures 3. Formalisation of relationships between entities 4. Establish the principles of secured contingencies, quality of supply, transmission system performance, and connection arrangements 5. Establish the principles of a full set of planning procedures including data management, long term system planning, customer service, and procurement and performance of ancillary services 6. Establish the principles of a full set of operational procedures including Grid Code compliance, all operational capability, ancillary services provision and control, contingency planning, and reporting 	<ol style="list-style-type: none"> 1. No programme in place 2. No programme in place 3. No programme in place 4. No programme in place 5. No programme in place 6. No programme in place 	<ol style="list-style-type: none"> 1. Q2-Q305 2. Q404-Q305 3. Q2-Q305 4. Q3-Q405 5. Q3-Q405 6. Q3-Q405
2. MO					
2.1	Legal & regulatory framework	A	<ol style="list-style-type: none"> 1. Market model to be prepared. 2. Legislation to provide for establishment of or requirement for MO and provide for its roles and responsibilities. 	<ol style="list-style-type: none"> 1. No programme in place; Regulator and transmission division of KEK (temporary TSO) developing approach 2. No programme in place 	<ol style="list-style-type: none"> 1. Q2-Q405 2. Q2-Q405
2.2	Institution building	R	<ol style="list-style-type: none"> 1. Structurally or functionally independent management of operations 2. Compliance with regulatory and market requirements 3. Market role definition 	<ol style="list-style-type: none"> 1. MO structures/functions not decided; no programme in place 2. No programme in place 3. Programme in place; article awaiting approval 	<ol style="list-style-type: none"> 1. Q2-Q305 2. Q2-Q305 3. Q404-Q205



			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
2.3	Systems integration	R	<ol style="list-style-type: none"> 1. Auditable and transparent settlement calculation procedure (both national and cross border) 2. Clear and confidential information exchange with TSOs 3. Separate or firewalled IT systems (from TSO and/or Utilities) 	<ol style="list-style-type: none"> 1. Settlement programme not in place 2. ESTAP II study currently developing specification of SCADA/EMS system 3. MO not operational at present, functions likely to be undertaken by TSO 	<ol style="list-style-type: none"> 1. Q2-Q305 2. Q2-Q305 3. Q2-Q305
3. Independent Regulator					
3.1	Legal & regulatory framework	G	<ol style="list-style-type: none"> 1. Independent Regulator required 2. Regulator to be responsible for ensuring non-discrimination, effective competition and the efficient functioning of the market. 	<ol style="list-style-type: none"> 1. No further action required. 2. No further action required 	
3.2	Institution building	A	<ol style="list-style-type: none"> 1. Regulator to agree tariff methodology and licensing procedures. 2. Secure & transparent funding 3. Technical capability to be largely internal rather than largely external 	<ol style="list-style-type: none"> 1. Regulator programme in place; support from USAID 2. No further action required 3. No programme in place 	<ol style="list-style-type: none"> 1. Q1-Q305 3. Q1-Q305
3.3	Issue licences	A	<ol style="list-style-type: none"> 1. Regulator should have ability to issue and revoke licences. 2. Licensing procedures to be established. 3. Regulatory structure for licensing of construction of new generation to be finalised. 	<ol style="list-style-type: none"> 1. No further legislation required. 2. Regulator programme in place; support from USAID 3. No further legislation required. 	<ol style="list-style-type: none"> 2. Q205
3.4	Write Grid Code	A	<ol style="list-style-type: none"> 1. Approve Grid Code written by TSO. 2. Establish bulk of the Grid Code including Security and Quality of Supply Standards, Connection Conditions, Planning Code, Operating Codes, Basic Data Registration Code. 	<ol style="list-style-type: none"> 1. Programme in place pending establishment of TSO; support likely from WB 2. Drafting of Grid Code expected to commence in Q105. 	<ol style="list-style-type: none"> 1. Q2-Q305 2. Q1-Q305
3.5	Publish G, T & D tariffs	A	<ol style="list-style-type: none"> 1. Agree tariff methodology, including appropriate returns for industry regulated businesses. 2. Need to agree asset valuation, ownership and long-term investment plans. 3. Government policy required on tariff cross subsidy 4. Calculate G, T and D tariffs according to methodology 	<ol style="list-style-type: none"> 1. No programmes in place; WB funding tariff review, tender commenced; EBRD funding tariff methodology development 2. No programme in place 3. No policy in existence 4. No programme in place 	<ol style="list-style-type: none"> 1. Q404-Q105 2. Q1-Q205 3. Q2-Q305 4. Q1-Q305
4. Competition for eligible customers					



			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
4.1	Set customer threshold	A	<ol style="list-style-type: none"> 1. Eligible customer threshold to be defined. 2. IT and dispatch systems must be able to handle metering requirements. 	<ol style="list-style-type: none"> 1. Ministry defines threshold annually; draft legislation on eligibility pending discussion 2. ESTAP II programme in place 	<ol style="list-style-type: none"> 1. Q2-Q305 2. Q1-Q405
4.2	Switching procedures	R	<ol style="list-style-type: none"> 1. Participants have TPA at TSO and disco voltage levels 2. Develop market rules and notification procedures 3. Set criteria and compile list of eligible customers and suppliers 	<ol style="list-style-type: none"> 1. Legislation in place; no regulator programme in place to set fees 2. Regulator and temporary TSO programme in place 3. No programme in place 	<ol style="list-style-type: none"> 1. Q2-Q305 2. Q2-Q305 3. Q1-Q205
5. Third Party Access					
5.1	Legal & regulatory framework	R	<ol style="list-style-type: none"> 1. Third parties to be granted right of access to networks. 2. Grid Code to provide for conditions of such access. 3. Prices for access to be prescribed. 	<ol style="list-style-type: none"> 1. No programme in place; awaiting establishment of TSO 2. No programme in place; awaiting establishment of TSO; WB support for future programme 3. Regulator to establish rules on pricing and tariffs; the subject of an EAR-supported project commencing in beginning 2005. 	<ol style="list-style-type: none"> 1. Q2-Q305 2. Q2-Q305 3. Q305
5.2	CBT participation	R	<ol style="list-style-type: none"> 1. Need to resolve issue of tax payments 2. Extension of CBT to non-TSO participants 3. Allocation methodology of revenues to TSOs 	<ol style="list-style-type: none"> 1. Currently unable to participate in CBT; Ongoing discussions 	<ol style="list-style-type: none"> 1. Q3-Q405
5.3	Grid & interconnector access	R	<ol style="list-style-type: none"> 1. Rules for TPA to interconnectors consistent on either end and for imports and exports 2. Publish available capacity on interconnectors 3. Rules to convert interconnector notified contracted transfers into aggregate interconnector flow 	<ol style="list-style-type: none"> 1. No programme in place 2. No programme in place 3. No programme in place 	<ol style="list-style-type: none"> 1. Q1-Q205 2. Q1-Q305 3. Q1-Q305
6. Liberalised electricity market					
6.1	Agree market structure	R	<ol style="list-style-type: none"> 1. Agree market structure including number of participants and their commercial links 2. Implement market structure 3. Agree market model including counterparty credit risk, government guarantees and wholesale price exposure. 4. Implement market model 	<ol style="list-style-type: none"> 1. No programme in place 2. No programme in place 3. No programme in place 4. No programme in place 	<ol style="list-style-type: none"> 1. Q1-Q205 2. Q1-Q205 3. Q1-Q205 4. Q1-Q205



			Actions Required for Initial REM	Current/Required Programmes for Initial REM	Time Scales
6.2	Establish market rules	R	<ol style="list-style-type: none"> 1. Write market rules, including rules to allow participants to enter and leave market 2. Implement market rules including conditions for contracts to be struck, notified and recorded. 3. Define dispute resolution process 	<ol style="list-style-type: none"> 1. No programme in place 2. No market rules defined 3. No programme in place 	<ol style="list-style-type: none"> 1. Q1-Q205 2. Q1-Q205 3. Q1-Q205
6.3	Write market rules	R	<ol style="list-style-type: none"> 1. Participants must be notified of rights and obligations 2. Monitoring of transactions must be timely and accurate 3. Dispute resolution mechanism should provide for timely and low-cost resolution of disputes through clear mechanism. 	<ol style="list-style-type: none"> 1. Participants yet to be identified 2. No programme in existence 3. No programme in place 	<ol style="list-style-type: none"> 1. Q1-Q205 2. Q2-Q405 3. Q3-Q405
7. Governance					
7.1	Public Accountability	A	<ol style="list-style-type: none"> 1. Clear reporting mechanisms of Regulator and market participants. 2. Public hearings and publication of decisions of Regulator. 3. Published code of ethics of Regulator. 	<ol style="list-style-type: none"> 1. No programme in place. 2. Operations & Statutes manual programme in place; support from USAID 3. Ethics manual programme in place; support from USAID 	<ol style="list-style-type: none"> 1. Q205 2. Q205 3. Q205
7.2	Authority	R	<ol style="list-style-type: none"> 1. Regulator requires effective method of enforcement of decisions and ability to impose penalties for failure to comply. 2. Regulator to have ability to influence security of supply policy. 3. Capability of directing sector strategy. 	<ol style="list-style-type: none"> 1. No further action required. 2. No programme in place 3. No programme in place 	<ol style="list-style-type: none"> 2. Q405 3. Q405



15 Full Regional Market Requirements to be fulfilled

Regional TSO

There are proposals to establish a regional TSO, but no plans are yet in place to do so. It is expected that the ECSEE Treaty will establish the role of the regional TSO and that SETSO will take a prominent role in its establishment. We agree with the recent CEER paper that the prompt establishment of a regional TSO would facilitate a smooth transition to the full REM, although we think that the regional TSO is likely to be established during 2006.

The exact nature of the role of the regional TSO has not currently been defined. Our assumption is that it will have a mainly advisory role, as outlined in section 5, but we recognise that its role is likely to develop over time.

A national TSO benchmarking programme is already in place, and SETSO has already issued a comprehensive benchmarking report for 2004. We consider that such benchmarking is vital to the continued success of the REM implementation and recommend that it continues, perhaps on a biannual basis, extended to cover the regional TSO as it is set up; both to assess progress towards implementation and to identify priority areas for improvement or change.

There is no programme in place to set up or fund a regional TSO as yet, nor is an institution building programme in place. There will also be a requirement for a programme to develop the systems and procedures to be used by the regional TSO. EDF are continuing with the development of the regional grid code which is expected to be complete in 2005. The integration of national TSO systems with regional TSO systems cannot start until such time as the regional TSO is in place and has started its programmes. However, there are programmes in place at all national TSOs implementing the systems likely to be integrated with a regional TSO.

Locational pricing may be one component of tariffs within a Full REM once the details are finalised, which may realise some efficiency advantages.

However, there is currently no programme in place to investigate or implement locational pricing.

SEEMO

The requirement for a SEEMO is agreed by the stakeholders, but there is not yet an agency in place and no plans to implement one. It is likely that the ECSEE Treaty will establish such a body and we agree with the CEER proposals that it would facilitate transition to the Full REM if the SEEMO were established in the near future. However, in practical terms, it is unlikely that the SEEMO will be implemented before 2006. Although the ECSEE Treaty may formalise the role of the SEEMO, there are no plans yet in place to set up and fund it, nor for institution building or the design and implementation of the Day Ahead Market and regional settlement systems.

The role of the SEEMO also needs to be developed. We assume that it will operate the DAM and settlement, as well as provide information to participants, as outlined in section 5.

As the national MO function in the SEE region is to be carried out within TSOs, the SETSO benchmarking programme is likely to cover some aspects of the MO role. We believe that the benchmarking should continue as part of the TSO benchmarking, with specific assessment of the regional MO role in addition to national benchmarking.

Regional Regulator

There have been proposals to establish a regional regulator, for example the Tirana Declaration provided for the establishment of a Regulators Board for electricity and gas. It is likely that the ECSEE Treaty will formally establish the role of the regional regulator. CEER has taken a prominent role in the establishment of a regional regulator and have proposed five levels of activity. Further work remains to be done on the establishment and role of the regional regulator. However, there is no programme in place to set up or fund the regional regulator, nor is an institution building programme in place. We anticipate that it could be in place by late 2005 or early 2006.

We have assumed that the regional regulator will act primarily in a co-ordination capacity, and will undertake specific regulator tasks associated with the Full REM (as detailed in section 5), including facilitation of a regional



disputes resolution process, and ensuring there are no unnecessary barriers to entities operating within different jurisdictions in the region. Additionally we anticipate it using its overview of the market to submit proposals for change to the Ministerial Council. No plans are in place to determine how the dispute resolution process would interface with national dispute resolution processes operated by national regulators under their respective energy laws and the Directive.

CEER have conducted a national regulator benchmarking study and we are aware of a programme to continue this study during 2005. We recommend that it be extended to cover the regional regulator once it is set up, and that the benchmarking continues in a manner similar to the TSO benchmarking discussed above.

Eligible Customers

Most jurisdictions in the region anticipate establishing an eligible customer threshold reduction programme, but not all of them have one in place yet, nor are they co-ordinated. The ECSEE Treaty is expected to commit each country to full non-domestic competition in 2008 and complete market opening in 2015. Education of customers as to their rights and obligations is a key part in ensuring effective market opening, and such programmes are not in place in the region in general. A training programme is required to support this process, and would be most effective in the period immediately prior to market opening.

It is assumed that customers that are eligible within a country will be eligible to participate in the regional market. However, this raises reciprocity issues as the eligibility levels vary significantly between the jurisdictions. There are additional practical issues that need to be addressed before customers will be effectively able to participate in the regional market, including metering, data gathering and communication issues. A programme to determine the appropriate participation criteria is required.

Regional DAM

The establishment of a regional DAM is proposed for the Full REM, but no programmes are yet in place to develop market rules or establish the DAM itself. CEER plan to issue a revised Action Plan to implement the SMD in March 2005, and envisage that, once adopted, programmes can be put in

place for implementation through 2005 and 2006. Our view is that implementation will extend into 2007. Market monitoring will be an essential part of the Full REM, and will need to cover the operation and performance of the DAM, of CBT as it evolves in the short term, of market opening, and of participant actions (e.g. to assess market power and trading trends). There is currently no market monitoring programme is yet in place

Governance

The establishment of the Ministerial Council, its Secretariat and the relationships with the PHLG and other market actors is likely to be addressed in the ECSEE Treaty. It will be important to build in safeguards of independence, through codes of conduct, funding, qualifications of members, procedures for appointment and removal of members, operating procedures and so on. Decision making of these bodies should be transparent and made on an objective basis, in order to ensure confidence in their operation. Once the Treaty is finalised, a programme to ensure these governance aspects will be required.

We consider that a benchmarking style programme of other regional institutions would be of benefit, which could also link into those focused on national institutions.



Full REM Implementation Plan

	H105	H205	H106	H206	H107	H207	H108	H208
1. Regional TSO								
1.1 Regional TSO framework	Yellow	Yellow	Red	Red				
1.2 Regional grid code	Yellow							
1.3 Legal status				Red	Red			
1.4 Institution building				Red	Red	Red		
1.5 Systems integration	Yellow	Yellow	Yellow	Yellow				
1.6 Biannual benchmarking			Red	Red				
1.7 Locational Pricing	Yellow	Yellow	Orange	Orange				
1.8 Technical operational procedures					Red	Red		
2. SEEMO								
2.1 Regional MO framework	Yellow	Yellow	Red	Red				
2.2 Institution building			Red	Red				
2.3 DAM & Settlement systems	Red	Red			Red	Red		
2.4 Biannual benchmarking	Yellow	Yellow						
3. Regional regulator								
3.1 Regional regulator framework	Yellow	Yellow	Red	Red				
3.2 Institution building			Red	Red	Red			
3.3 Biannual benchmarking	Yellow	Yellow				Red		
3.4 Regional regulatory procedures								
4. Competition for eligible customers								
4.1 Non-domestic competition	Yellow	Yellow	Red	Red	Red	Red		
4.2 Customer education								
5. Third party access								
5.1 Effective TPA	Yellow	Yellow	Yellow					
5.2 IC Capacity auctions	Yellow	Yellow	Red	Red	Red	Red		
6. Market rules and trading								
6.1 Regional market rules	Yellow	Yellow	Yellow					
6.2 Market implementation			Red	Red	Red	Red		
6.3 Market monitoring scheme			Red	Red	Red	Orange		
6.4 Develop trading instruments					Red	Red	Red	Red
6.5 Set up ancillary services market						Red	Red	Red
7. Governance								
7.1 Annual Benchmarking	Yellow	Yellow	Yellow	Yellow	Red	Red		
7.2 Public Accountability			Red	Red				



			Actions Required for Full REM	Programmes Required for Full REM	Time Scales
1.1 Regional TSO					
1.1	Regional TSO Framework	A	<ol style="list-style-type: none"> 1. Agree form, role and responsibilities of Regional TSO body. 2. Draft multi-lateral agreements to establish Regional TSO body. 3. Amend national laws to recognise regional TSO tasks and responsibilities. 	<ol style="list-style-type: none"> 1. PHLG and SETSO programs in place to propose suitable Regional TSO structures. 2. No programme in place. 3. No programme in place. 	<ol style="list-style-type: none"> 1. Q1-Q405 2. Q1-Q306 3. Q2-Q406
1.2	Regional Grid Code	A	<ol style="list-style-type: none"> 1. Complete regional grid code 	<ol style="list-style-type: none"> 1. EdF programme in place. 	<ol style="list-style-type: none"> 1. Q1-Q205
1.3	Legal status	R	<ol style="list-style-type: none"> 1. Ensure full functional, legal and operational separation from host utilities or jurisdictions through joint or independent ownership. 2. Transparent management, codes of practice and procedures required. Accountability and reporting requirements to be defined. 3. Power of sanction and enforceability of decisions to be defined, possibly through intergovernmental agreement or treaties or agreement between the national TSOs. 	<ol style="list-style-type: none"> 1. No programme in place. 2. No programme in place. 3. No programme in place. 	<ol style="list-style-type: none"> 1. Q3-Q406 2. Q406-Q107 3. Q1-Q207
1.4	Institution building	R	<ol style="list-style-type: none"> 1. Establish permanent management and operational structure. 2. Procure building(s), IT systems, communication system, SCADA/EMS system (or contracted access to). 3. Staff recruitment (full time) and/or placement (secondment from National TSOs). 4. Develop procedures, staff tasks and training programs. 	<ol style="list-style-type: none"> 1. No programme in place. 2. No programme in place. 3. No programme in place. 4. No programme in place. 	<ol style="list-style-type: none"> 1. Q3-Q406 2. Q406-Q107 3. Q1-Q307 4. Q2-Q407



			Actions Required for Full REM	Programmes Required for Full REM	Time Scales
1.5	Systems integration	A	<ol style="list-style-type: none"> 1. Establish full electronic communications between the Regional TSO and National TSOs, SEEMO and other parties to ensure market measurement and settlement systems operate. 2. All National TSOs are currently implementing new or improved SCADA/EMS systems. Requirement to ensure they are compatible. 3. Establish methods of measurement, control, procurement and monitoring of power flows and ancillary services. 	<ol style="list-style-type: none"> 1. Level of information required by Regional TSO to be defined by role and structure, which is under development by PHLG and SETSO. 2. ETSO establishing data transfer procedures and compatibility criteria. 3. No programme in place for direct or automated interface of all systems. 	<ol style="list-style-type: none"> 1. Q105-Q406 2. Q105-Q406 3. Q1-Q407
1.6	Biannual Benchmarking	A	<ol style="list-style-type: none"> 1. Undertake consistent and impartial benchmarking study in all jurisdictions 2. Identify institutional shortcomings and recommend/implement corrective actions 	<ol style="list-style-type: none"> 1. SETSO programme in place for 2005; no programme in place thereafter. 2. PHLG programme in place. 	<ol style="list-style-type: none"> 1. Q105-Q407 2. Q105-Q407
1.7	Locational pricing	R	<ol style="list-style-type: none"> 1. Undertake consistent and impartial benchmarking study in all jurisdictions 2. Identify institutional shortcomings and recommend/implement corrective actions 	<ol style="list-style-type: none"> 1. SETSO programme in place for 2005; no programme in place thereafter. 2. PHLG programme in place. 	<ol style="list-style-type: none"> 1. Q105-Q407 2. Q105-Q407
1.8	Technical operational procedures	R	<ol style="list-style-type: none"> 1. Develop operational rules/procedures including available transfer capacity allocation procedures at regional level. 2. Development of regional rather than nationally-focused planning procedures on secured contingencies, quality of supply, transmission system performance, and connection arrangements. 	<ol style="list-style-type: none"> 1. Extension of the existing CA programme under the CBT mechanism. 2. No programme in place. Will require regional TSO institution to be in place. 	<ol style="list-style-type: none"> 1. Q1-Q207 2. Q3-Q407
2. SEEMO					
2.1	Regional MO Framework	A	<ol style="list-style-type: none"> 1. Establish SEEMO to co-ordinate cross border market activities such as day-ahead market operation, communication and settlement. 2. Draft intergovernmental agreements or treaties to establish SEEMO body ownership and funding. 3. Amend national laws to recognise role of SEEMO. 	<ol style="list-style-type: none"> 1. CEER working group assessing role of SEEMO. 2. No programme in place. 3. No programme in place. 	<ol style="list-style-type: none"> 1. Q105-Q406 2. Q1-Q406 3. Q1-Q406



			Actions Required for Full REM	Programmes Required for Full REM	Time Scales
2.2	Institution building	A	<ol style="list-style-type: none"> 1. Establish permanent management and operational structure. 2. Procure building(s), IT systems and communication system. 3. Staff recruitment (full time) and/or placement (secondment from National MOs). 4. Develop procedures and staff tasks and training. 	<ol style="list-style-type: none"> 1. CEER working group progressing structure, external support required; no programme in place. 2. No programme in place. 3. No programme in place. 4. No programme in place. 	<ol style="list-style-type: none"> 1. Q105-Q406 2. Q1-Q206 3. Q1-Q306 4. Q2-Q406
2.3	DAM & Settlement Systems	R	<ol style="list-style-type: none"> 1. Design and implement full day ahead market 2. Integrate real time data exchange and central balancing authority 3. Rules for settlement and moving from DAM to within-day balancing regimes. 4. Develop rules and procedures, test/dry run and have market go live. 	<ol style="list-style-type: none"> 1. No programme in place. 2. National TSMOs developing SCADA systems, which should be compatible. 3. No programme in place. 4. No programme in place. 	<ol style="list-style-type: none"> 1. Q1-Q406 2. Q105-Q407 3. Q1-Q406 4. Q1-Q407
2.4	Biannual benchmarking	A	<ol style="list-style-type: none"> 1. Undertake consistent and impartial benchmarking study in all jurisdictions 2. Identify institutional shortcomings and recommend/implement corrective actions 	<ol style="list-style-type: none"> 1. SETSO programme in place for 2005; no programme in place thereafter. (MO part of most TSOs). 2. PHLG programme in place. 	<ol style="list-style-type: none"> 1. Q105-Q407 2. Q105-Q407
3. Independent Regulator					
3.1	Regional regulator framework	A	<ol style="list-style-type: none"> 1. Assess effectiveness of National regulator co-operation in Initial REM. 2. Agree form, role and responsibilities of Regional Regulatory body. 3. Draft multi-lateral agreements to establish Regional Regulatory body. 4. Amend national laws to allocate national regulatory tasks or responsibilities to regional regulator. 	<ol style="list-style-type: none"> 1. Ministerial and CEER review of national regulator operations ongoing and needs to continue. 2. CEER programs in place to propose suitable Regional regulator structures. Need to assess proposals in national context. 3. No programme in place. 4. No programme in place. 	<ol style="list-style-type: none"> 1. Q1-Q405 2. Q1-Q405 3. Q1-Q306 4. Q2-Q406
3.2	Institution building	R	<ol style="list-style-type: none"> 1. Establish permanent management and operational structure. 2. Procure building(s), IT systems and communication system. 3. Staff recruitment (full time) and/or placement (secondment from national regulators). 4. Develop procedures and staff tasks and training. 	<ol style="list-style-type: none"> 1. No programme in place. 2. No programme in place. 3. Level and type of regional regulator staffing to be defined in agreed structure. 4. No programme in place. 	<ol style="list-style-type: none"> 1. Q1-Q206 2. Q2-Q406 3. Q306-Q107 4. Q1-Q207



			Actions Required for Full REM	Programmes Required for Full REM	Time Scales
3.3	Biannual benchmarking	A	<ol style="list-style-type: none"> Undertake consistent and impartial benchmarking study in all jurisdictions Identify institutional shortcomings and recommend/implement corrective actions 	<ol style="list-style-type: none"> CEER programme in place for 2005; no programme in place thereafter. PHLG programme in place. 	<ol style="list-style-type: none"> Q105-Q407 Q105-Q407
3.4	Regional regulatory procedures	R	<ol style="list-style-type: none"> Supply and retail licences issued in one jurisdiction to be recognised in others. Each country to adjust secondary legislation or regulations. Monitoring and enforcement of licensee compliance at regional level. Dispute resolution procedures, scope and enforceability. 	<ol style="list-style-type: none"> No programme in place. No programme in place. No programme in place. 	<ol style="list-style-type: none"> Q1-Q406 Q1-Q207 Q306-Q207
4. Competition for eligible customers					
4.1	Non-domestic Competition	A	<ol style="list-style-type: none"> Lower consumption level for eligibility in laws Establish metering capability and/or agree customer demand profiles Enhance IT systems to accommodate significant increase in eligible customer registrants, transactions and market information 	<ol style="list-style-type: none"> Most jurisdictions planned reduction in future but not all have programmes in place. SCADA EMS system being enhanced together with more metering. Programme underway in all jurisdictions. Further SCADA and other system enhancement required; no programme in place. 	<ol style="list-style-type: none"> Q105-Q407 Q105-Q407 Q405-Q407
4.2	Customer Education	R	<ol style="list-style-type: none"> Estimate, minimise and publish switching costs Implement customer protection mechanisms. Advertise benefits of switching 	<ol style="list-style-type: none"> No programme in place. No programme in place. No programme in place. 	<ol style="list-style-type: none"> Q1-Q406 Q1-Q407 Q1-Q407
5. Third party access					
5.1	Effective TPA	A	<ol style="list-style-type: none"> Develop practical implementation procedures as eligible customer numbers increase 	<ol style="list-style-type: none"> Programme in place in most jurisdictions 	<ol style="list-style-type: none"> Q105-Q206
5.2	IC capacity auctions	R	<ol style="list-style-type: none"> Involve all national TSOs in SETSO, CER and Florence Forum studies and programmes Implement capacity auction processes and procedures in each TSO 	<ol style="list-style-type: none"> SETSO and CEER programmes in place. No programme in place. 	<ol style="list-style-type: none"> Q1-Q405 Q106-Q407
6. Market Rules and trading					



			Actions Required for Full REM	Programmes Required for Full REM	Time Scales
6.1	Regional market rules	A	<ol style="list-style-type: none"> Detailed development and agreement of SMD structure. Define roles of existing players in SMD and/or propose and develop new participants. Amendments, if required, to national markets to ensure compatibility with regional SMD 	<ol style="list-style-type: none"> CEER working group developing proposals. CEER working group developing proposals. CEER working group developing proposals. 	<ol style="list-style-type: none"> Q105-Q206 Q105-Q206 Q1-Q206
6.2	Market implementation	R	<ol style="list-style-type: none"> Write market rules Develop settlement and information systems Establish nomination, notification and dispute procedures. 	<ol style="list-style-type: none"> No programme in place No programme in place No programme in place 	<ol style="list-style-type: none"> Q1-Q406 Q306-Q207 Q1-Q407
6.3	Market monitoring scheme	R	<ol style="list-style-type: none"> Monitor regional market performance Monitor impact on national markets 	<ol style="list-style-type: none"> No programme in place No programme in place 	<ol style="list-style-type: none"> Q206-Q407 Q206-Q407
6.4	Develop trading instruments	R	<ol style="list-style-type: none"> Standardisation of bilateral contracts terms and conditions to enhance tradability (preferable rather than necessary) Facilitate development of financial instruments 	<ol style="list-style-type: none"> No programme in place No programme in place 	<ol style="list-style-type: none"> Q1-Q407 Q307-Q308
6.5	Set up Ancillary Services Market	R	<ol style="list-style-type: none"> Definition of tradable ancillary services products Agreement of pricing principals Agree measurement and monitoring procedures across interconnectors and with service providers Agree provision and pricing of replacement ancillary services in case of non-delivery 	<ol style="list-style-type: none"> Detailed definitions are required Establish and operate Ancillary Services Contract Delivery Monitoring Implement process No programme in place 	<ol style="list-style-type: none"> Q3-Q407 Q307-Q108 Q1-Q308 Q1-Q308
7. Regional Body Governance					
7.1	Annual benchmarking	A	<ol style="list-style-type: none"> Undertake consistent and impartial benchmarking study in all jurisdictions Identify institutional shortcomings and recommend/implement corrective actions 	<ol style="list-style-type: none"> CEER programme in place for 2005; no programme in place thereafter. PHLG programme in place. 	<ol style="list-style-type: none"> Q105-Q407 Q105-Q407



			Actions Required for Full REM	Programmes Required for Full REM	Time Scales
7.2	Public Accountability	R	<ol style="list-style-type: none"> 1. Clear reporting mechanisms of regional bodies and/or market participants to be established. 2. Procedures providing for public hearings and publication of decisions of regional bodies to be prepared. 3. Publish code of ethics of regional bodies. 	<ol style="list-style-type: none"> 1. No programme in place. 2. No programme in place. 3. No programme in place. 	<ol style="list-style-type: none"> 1. Q1-Q306 2. Q3-Q406 3. Q306

16 Conclusion

The REBIS study has assessed the progress of each of the seven CARDS jurisdictions towards the implementation of a Regional Electricity Market in SEE. The Consortium concluded that a REM could be implemented for the end of 2005 if an interim solution was adopted. Once an Initial REM is operational, work should continue on adding additional features to the market, such that a Full REM based on the principles of the SMD proposed by CEER, and approved in the Athens Forum process, can be ready for operation by the end of 2007.

A considerable amount of work has been done in each jurisdiction in the liberalisation of its national electricity market, in a way that will be consistent with the objectives of a regional market. However, a significant amount of work remains to be completed if the target dates are to be achieved by all the participants. This report identifies the main steps that are required for implementation, and highlights the timescales within which they should be completed. Programmes are in place to address some of the outstanding steps, but there are steps that are unlikely to be completed without additional programmes being developed and funded. The jurisdiction summaries highlight these programmes.

The status and rate of progress in each of the jurisdictions has been changing quickly over the period of this project, and we anticipate that the rate of change will continue. Monitoring of progress will be key in ascertaining whether the target dates for the Initial and Full REM remain achievable, and whether additional market features can be added into the Initial REM at an early stage. We believe that the benchmarking programme carried out during 2004 on TSOs, regulators and ministries should be continued, with additional emphasis being placed on market development and liberalisation. Ideally, six-monthly progress assessments are required, given the short timescale before the Initial REM target implementation date, and the dependencies for the Full REM.

Co-operation between regional bodies, donors, consultants and market participants has been instrumental in achieving the rate of progress seen to date. We believe that such levels of co-operation will be vital going forward, and that a co-ordinator (e.g. within the Secretariat) may be best placed to provide such a service.

We believe that institutional capacity building is the most important task required over the next three years. This will allow market knowledge, expertise and operational know-how to be passed to the participants of the REM in SEE, allowing them to participate more fully and effectively in a competitive electricity market.