South East Europe Wholesale Market Opening

Overview and gap analysis

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Hans-Arild Bredesen

Acknowledgement

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The Energy Sector Management Assistance Program (ESMAP) is a global technical assistance program which helps build consensus and provides policy advice on sustainable energy development to governments of developing countries and economies in transition. For more information on the program see the website: www.esmap.org

The Public-Private Infrastructure Advisory Facility (PPIAF) is a multi-donor technical assistance facility aimed at helping developing countries to improve the quality of their infrastructure through private sector involvement. For more information on the facility see the website: www.ppiaf.org

The Word Bank is managing the Project as a part of its support to the development of the Energy Community. For information about the World Bank's energy sector activities see the website: www.worldbank.org/energy

The proposed market design

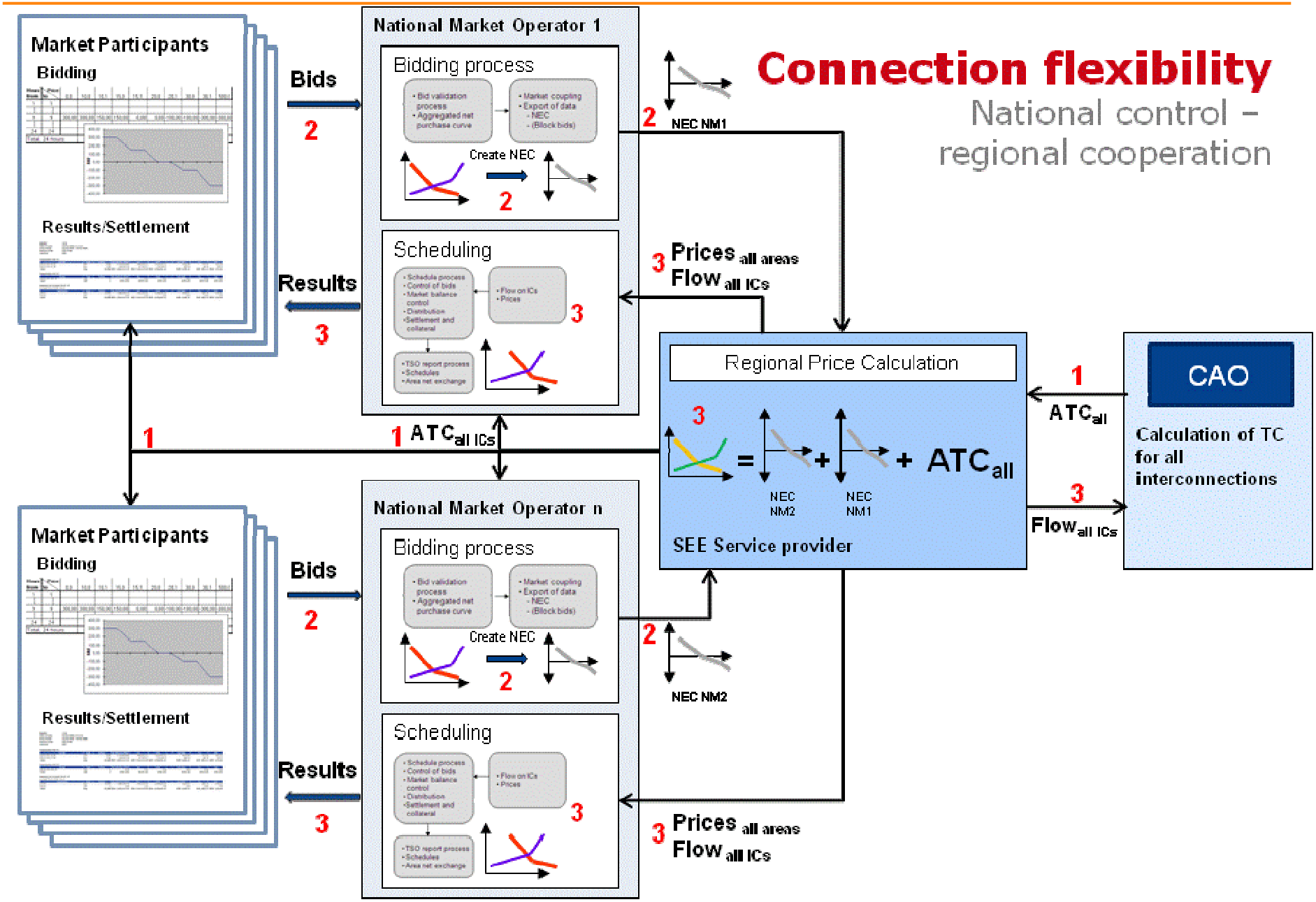
Overview of the proposed market design

SEE Wholesale Market Opening
Main recommendations by the Consultant

- Wholesale Market Opening in the region requires a ***regional solution***
- Regional solution is based on a ***de-centralized regional market design***
  - Implementation with national control and regional cooperation
- Each national market ***developed in parallel*** with the regional market
  - No separate national competitive wholesale markets
  - No break-up of national incumbents (required by the market design)
- ***Align development*** of SEE markets with mainstream ***European trends***
- Use of ***implicit auctions*** in close cooperation with the CAO
- ***Competition*** between OTC/Exchange/Bilateral
  - Improve bilateral trading practices – standardization of contracts - transparency

Connection flexibility

National control – regional cooperation



Gap analysis for the region

How to get from today's situation to a the target model with a regional solution?

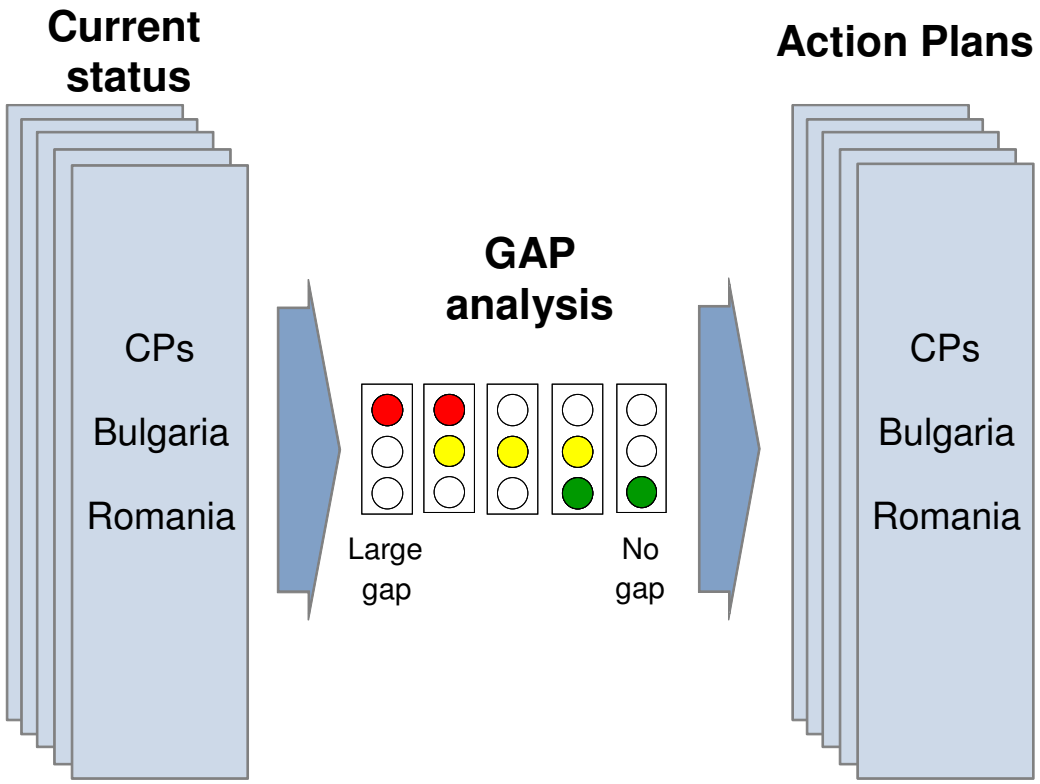
Action plan and road map for the SEE region

- The Study contains a Gap analysis for each Contracting Party in the region.
- The Gap analysis is common for all Contracting Parties
  - This analysis was performed during spring 2010.
  - All Contracting Parties got the Gap analysis and local action plans for review
  - The agreed and commented versions was added to the final version of the Study
- The Action plan is divided into two portions
  - One common plan for the required actions on the regional level
  - Individual action plans for each Contracting Party
- The reported progress as part of the ECRB work shows good progress on the identified actions also valid for the SEE Regional Market

High level Gap analysis – methodology

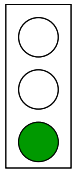
Minimum requirements

- TSO unbundling
- Supplier unbundling
- Eligibility
- Balance responsibility and balance mechanism
- Market concentration
- Transparency
- Establishment of DAM

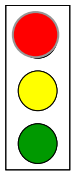


High level Gap analysis – status pr 2010

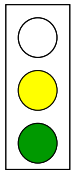
- *TSO unbundling*
  - All Contracting Parties have done this



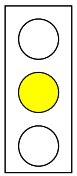
- *Supplier unbundling*
  - This varies a lot between the Contracting Parties.
  - One general obstacle is the Full Supply contracts between the incumbant generator and distribution



- *Eligibility*
  - Most of the Contracting Parties are ready, some have some more work to do.
  - Again, the contractual framework in many of the Contracting Parties is a Full Supply Contract

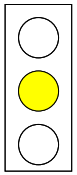


- *Balance responsibility and balance mechanism*
  - Most of the required decisions have been made, but implementation of a balancing mechanism and/or markets is missing in most Contracting Parties
  - Hourly metering is implemented

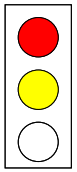


High level Gap analysis – status pr 2010

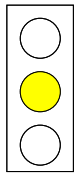
- *Market concentration*
  - In general, all Contracting Parties are dominated by one (or few) generators
  - All of the Contracting Parties have large import/export capacities



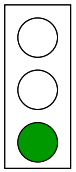
- *Transparency*
  - There are improvements that is required especially on publishing of price information, UMMs (relevant market information affecting prices/production)



- *Establishment of DAM*
  - In general, there is a political support to establish a regional DAM as well as legal provisions for doing so.
  - In most Contracting Parties there would require more work on the detailed provisions ; in some cases legal drafting would probably be required
  - The real status varies, some Contracting Parties is almost ready

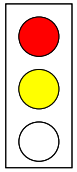


Gap analysis – Albania



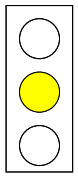
TSO unbundling

- Albania has established a legally unbundled and independent TSO (OST).
- Distance independent transmission tariffs established.
- KESH obliged to sell ancillary services and electricity to cover transmission losses to TSO at regulated price.



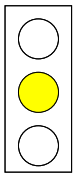
Supplier unbundling

- A wholesale public supplier exists with the responsibility of buying electricity and to provide sufficient supply to the retail public supplier.
- The retail public supplier sells electricity only to tariff customers, under terms and conditions approved by the regulator. Full supply contract.
- The dominant generator, KESH Gen, is obliged to sell electricity to the wholesale public supplier at regulated prices. Full supply contract.
- No plans are established to reduce contract volumes between Public Supplier and Generator.



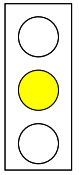
Eligibility

- All non-household customers can apply to become eligible.
- Necessary hourly metering and settlement systems established for eligible customers.
- Separate transmission and distribution tariffs for eligible customers are established for customers connected to the distribution network.
- Regulated prices for the existing domestic hydro generation are below market prices, making it non-economical for customers to purchase on the open market.
- Currently only 1 customer is exercising eligibility.



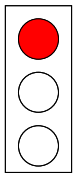
Balance responsibility and balance mechanism

- Hourly metering for large customers established.
- Regulation for balancing mechanism decided.
- Balancing mechanism is not yet implemented, expected to be implemented by end of 2010.



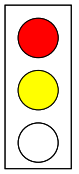
Market concentration

- KESH stands for 99% of generation.
- Between 60% and 70% of the demand was imported in 2007, but in general only 30-40% of the demand is imported.
- Import capacity 40% of capacity of incumbent. (Data from 2007: Peak capacity 1 686 MW, Average import capacity 675 MW, incumbent 99%).



Transparency

- Wholesale prices for imported power are <u>not</u> published and easily made available for market participants.
- Available cross border capacity and flows <u>not</u> published and easily made available for market participants.
- Planned maintenance for generation and transmission are <u>not</u> published and easily made available for market participants.
- Generation and transmission outages <u>not</u> published and easily made available for market participants.



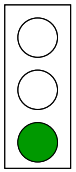
Establishment of DAM

- There is a political support in Albania to establish a regional DAM.
- The actual market rules need to be modified in order to authorize the TSO to allocate cross border transmission capacity to a DAM (local or regional).
- There are no legal barriers to establish a DAM.
- Responsibility for establishing a DAM not allocated.
- Responsibility for market monitoring and surveillance not allocated.

Main recommended actions

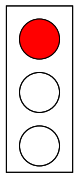
- Abolish Full supply contracts between KESH and Public Supplier
- Gradually replace Full Supply contracts with base load + market based for both Supply and Eligible customers
- Mandatory balance responsibility in the Wholesale market
- Publish market data
- Mandate the TSO to join RMD and create NMO

Gap analysis – Bosnia and Herzegovina



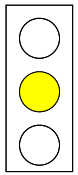
TSO unbundling

- ISO BIH operates the transmission system and balancing market is legally unbundled.
- A single company for transmission, TRANSCO, of electricity in Bosnia and Herzegovina (Elektroprenos Bosne i Hercegovine, Banja Luka) is legally unbundled.
- Distance independent grid tariffs established.
- Transmission losses purchased by balancing responsible parties (BRPs). BPRs schedule (day ahead) additional MW(s) in order to cover for transmission losses. Based on the historical data (consumption/generation) ISO BiH determines the level of the additional MW(s) to be generated for each BRP.



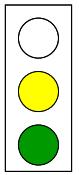
Supplier unbundling

- Utility has legally unbundled generation from distribution and supply (not unbundling between distribution and supply).
- Both utilities in FBiH are not yet legally unbundled.
- Full Supply contracts between Public Supplier and Generator in all 3 utilities.
- No plans are established to reduce contract volumes between Public Supplier and Generator.



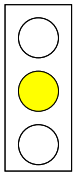
Eligibility

- All non-household customers can become eligible, but they can stay under regulated tariffs and no one executes eligibility.
- It is possible for large eligible customers to enter the market, i.e., necessary hourly metering, settlement and separate network tariff are established.
- Separate grid tariff has been established for customers connected to the distribution grid.
- It is not economically interesting to purchase on the open market due to more favourable regulated prices.
- One major customer, Aluminij JSC Mostar accounts for about 20% of total consumption and it obtained eligible status in 2007.



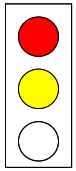
Balance responsibility and balance mechanism

- A balancing mechanism is in place (responsibility of the ISO).
- In phase 1 of market opening only the three utilities are balance responsible parties (no other market participant may be a BRP). Each market participant will have to register and be represented by a BRP (signing a standard Balance Responsibility Contract).
- Devices for hourly metering have been installed, but metering and settlement system and database are not fully implemented.



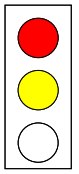
Market concentration

- Three state owned utilities; EPBiH, EPRS and EPHZHB with 47%, 39% and 14% of generation respectively. Each company is a virtual monopoly within its geographical service territory.
- Import capacity 38% of capacity of incumbent. (Data from 2007: Peak capacity 3 781 MW, Average import capacity 1 455 MW, incumbents 100%. Data not confirmed)



Transparency

- Wholesale prices are <u>not</u> published for market participants.
- ISO BIH publishes all available transfer capacities (ATC) on a monthly and daily basis. However cross border flows <u>not</u> published and easily made available for market participants.
- Planned maintenance for generation and transmission are <u>not</u> published and easily made available for market participants.
- Generation and transmission outages <u>not</u> published and easily made available for market participants.



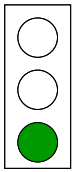
Establishment of DAM

- There is political support to establish a regional DAM
- It is legally allowed for the TSO to allocate cross-border transmission capacity to a DAM
- There is no legal framework covering establishment of a DAM
- The responsibility for establishing a DAM has not been allocated
- Regulators (entity and state level as well) are responsible for market monitoring and surveillance

Main recommended actions

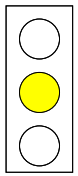
- Abolish Full supply contracts between Generator and Public Supplier
- Gradually replace Full Supply contracts with base load + market based for both Supply and Eligible customers
- Publish market data
- Mandate the TSO to join RMD and create NMO

Gap analysis – Croatia



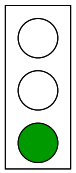
TSO unbundling

- TSO (HEP Transmission Ltd) is legally unbundled but part of the HEP group.
- The market operator (HROTE) is 100% state owned and legally unbundled. HROTE has responsibility for the adoption of market rules, organising the market and settlement of balancing energy.
- Distance independent transmission tariffs established.
- HEP-GENCO is responsible for covering the transmission losses. TSO to buy losses is under consideration.



Supplier unbundling

- Supply unbundled from distribution.
- HEP Generation serves household customers through Suppliers. In 2011 the regulator will make a public procurement for all household customers for a five year period. One contract for the whole jurisdiction.

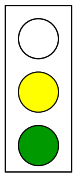


Eligibility

- All non-household customers are eligible. They must buy on the open market.
- Separate grid tariffs in distribution grids.
- Necessary metering and settlement systems established for all non-household customers.
- Since it is mandatory for all non-household customers these customers can not resort to a more favourable regulated tariff.

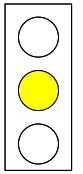
Balance responsibility and balance mechanism

- Rules for balancing, metering and settlement established, but some changes are required to make balancing market efficient.
- Hourly metering or load profiles are used.



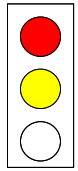
Market concentration

- HEP stands for 90% of generation and supplies all tariff customers
- Import capacity 60% of capacity of incumbent. (Average import capacity 2 400 MW, Capacity of incumbents 4 000 MW)



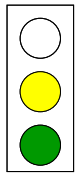
Transparency

- Wholesale prices are <u>not</u> published and easily made available for market participants
- Available cross border capacity published and easily made available for market participants. Flows <u>not</u> published and easily made available for market participants
- Planned maintenance for generation and transmission are <u>not</u> published and easily made available for market participants
- Generation and transmission outages <u>not</u> published and easily made available for market participants.



Establishment of DAM

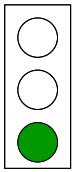
- There is a political support to establish a regional DAM
- It is legally allowed for the TSO to allocate cross-border transmission capacity to a DAM
- It is legally allowed to establish a DAM
- The responsibility for establishing a DAM has not been allocated
- Responsibility for market monitoring and surveillance has been allocated to HROTE and HERA



Main recommended actions

- Abolish Full supply contracts between HEP Generator and Public Supplier
- Gradually replace Full Supply contracts with base load + market based for both Supply and Eligible customers
- Publish market data
- Commit to join RMD and create NMO

Gap analysis – FYR of Macedonia

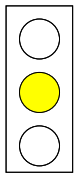


TSO unbundling

- The TSO and market operator (MEPSO) are legally unbundled.
- Distance independent transmission tariffs established (post-stamp tariff).

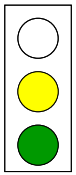
Supplier unbundling

- Distribution company (EVN) ownership unbundled (owned by Austrian utility EVN - 90% and 10% -state owned)
- Full supply contract between generator (ELEM) and distributor (EVN). EVN, as a supplier, can purchase from other producers and/or traders if the market conditions and price are more favourable than from the regulated generator. The purchase by EVN will be made on transparent, non discriminatory and market based principles. EVN, as DSO, purchase electricity on the open market to cover losses above approved levels (11%) by the regulator.
- Plans to reduce contract volumes between Public Supplier (EVN) and Generator (ELEM) will be established with the changes of the Energy Law.



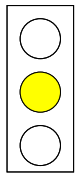
Eligibility

- It is practically possible for eligible customers to enter the market
- All customers connected on 110 kV level are eligible (mandatory). 9 eligible customers representing 30% of the market in 2008. Next steps for liberalisation of the electricity market are envisaged within the Action plan for further implementation of the EU acquits, adopted by the Government of the Republic of Macedonia
- Necessary hourly metering and settlement systems for eligible customers are established
- It is mandatory for eligible customers to purchase on the market



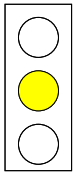
Balance responsibility and balance mechanism

- Balancing mechanism under establishment. Will be included in new Market Code which is expected to be approved by the Energy Regulatory Commission in March 2010.
- Necessary hourly metering for eligible customers are established.



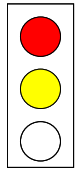
Market concentration

- Two state owned generators, ELEM (with 2 TPP coal-fired and 7 HPP) and Negotino (with fuel oil fired generation). Market size of these two generators around 90%.
- Seven small HPP are operated by a private entity Makhydro Proekt under the Rehabilitation Operation and Transfer (ROT) Model.
- Import of electricity was about 32 % of demand in 2008.
- Import capacity 27% of capacity of incumbent
- New interconnectors to Serbia have started with preparation in 2009 and there have also been discussions about a new line to Albania



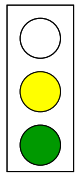
Transparency

- Regulated prices are approved and published by the Regulator. Yearly average prices by trader are published in yearly reports.
- Available cross border capacities and flows <u>are</u> published and easily made available for market participants - announced on the web – page of JSC MEPSO, as well as the results of auction.
- Planned maintenance for generation are <u>not</u> published and easily made available for market participants.
- Generation and transmission outages not published directly to market participants, but in media.



Establishment of DAM

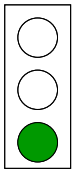
- There is a political support to establish a regional DAM.
- ISO can allocate cross-border transmission capacity to a DAM.
- It is legally allowed to establish a DAM.
- The responsibility for establishing a DAM has been allocated.
- Responsibility for market monitoring and surveillance has been allocated.



Main recommended actions

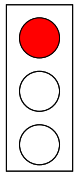
- Abolish Full supply contracts between HEP Generator and Public Supplier
- Gradually replace Full Supply contracts with base load + market based for both Supply and Eligible customers
- Publish market data
- Commit to join RMD

Gap analysis – Montenegro



TSO unbundling

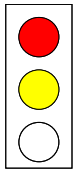
- TSO is legally unbundled from EPCG (national electricity utility) and exists as a separate joint venture company
- Distance independent transmission tariffs are established. The decision on regulatory revenue of TSO is done in completely separate process from the tariffs for EPCG



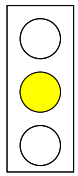
Supplier unbundling

- Distribution functionally unbundled from Supply within EPCG.
- EPCG is at the same time Public Supplier, no supply/generation unbundling

Eligibility



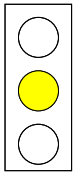
- All non-household customers are formally eligible, but there is only one supplier. Traders do not have access to the final customers because they need to obtain supply licence.
- Regulator issued one more supply licence to some private company, but they do not operate yet.
- One large consumer, an aluminium factory, will be fully exposed to market prices in 2010. The latest decisions of the Agency provide for market opening for all eligible customers, including largest consumers, but there is still no one supplier that operates in Montenegro at the moment (except EPCG)
- Distribution tariffs are presented as part of tariffs for EPCG, but part of the tariff for use of distribution network and part for losses in distribution are clearly separated from the other tariffs for EPCG



Balance responsibility and balance mechanism

- According to the Market Rules the balancing responsibility is established. Balancing mechanism is also established through the Market Rules, but balancing price is not established yet.
- Hourly metering is in place to serve the wholesale market (invoicing of trade and imbalances)

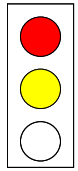
Market concentration



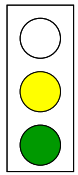
- The state owned power company (EPCG) holds 100% of the production capacity.
- Import covered 40% of consumption in 2007.
- A new 400kV power line between Montenegro and Albania is expected to be in operation in 2010

Transparency

- One operational supplier at the moment (EPCG), it purchases electricity according to Public Procurement Law. The results (both amounts and prices) are published, but usually through the newspaper and other unofficial ways. As there is no real market, so EPCG purchases electricity on a single tender for the whole year.
- Available cross border capacities and flows (real time) are published on the web site of TSO: http://www.tso-epcg.com/.
- Planned maintenance for generation and transmission are not published and easily made available for market participants.
- Generation and transmission outages not published, but market participants can get the information easily from the operators.



Establishment of DAM

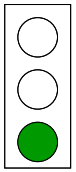


- There is a political support to establish a regional DAM.
- It will be allowed for TSO to allocate cross-border capacity to a DAM as soon as the decision to establish a DAM is taken.
- It is legally allowed to establish a DAM.
- The responsibility for establishing a DAM has been allocated to the Market Operator
- Regulator is responsible for market monitoring, but responsibility for market surveillance is not allocated.

Main recommended actions

- Abolish Full supply contracts between HEP Generator and Public Supplier
- Gradually replace Full Supply contracts with base load + market based for both Supply and Eligible customers
- Establish balancing prices in accordance with Market Rules. (planned 2010)
- Publish market data
- Commit to join RMD and establish market surveillance function

Gap analysis – Serbia

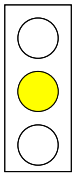


TSO unbundling

- TSO (PE EMS) is totally (legally, financially, functionally, ownership) unbundled.
- Distance independent transmission tariffs established.

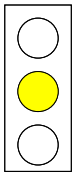
Supplier unbundling

- In Serbia a hybrid market exists consisting of two segments- regulated market and competitive market.
- EPS – Trading serves the tariff customers (regulated segment of the market) and has a 95% market share on the wholesale level. EPS (under its license for trade on the free market) and 30 actively participating and obtained EIC code traders are players on the free segment of the market, covering the remaining 5% of the wholesale trade. On the retail level, EPS subsidiaries (operating under PSO) licensed for supply of tariff customers are serving 100% of the market, since no potentially eligible customer switched to the free market due to the fact that regulated prices are lower than the market prices.
- EPS generation has full supply contracts with EPS Trading. EPS Trading holds two licenses- for wholesale trade for tariff customers and for trade on free market (includes both wholesale and retail trade, import and export)
- The draft amendments to the Energy Law envisage abolition of the right of eligible customers to be supplied under regulated tariffs, relieving thereby significant part of EPS generation which will be directed to the free segment of the market



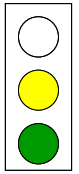
Eligibility

- All non-household customers are eligible, giving a formal market opening of 47%. No one executes its eligibility. 2.4 TWh (10% of total consumption) is directly connected to the transmission grid.
- Hourly metering and settlement systems for large customers connected to the transmission system are in place. Customers on distribution level are not metered on hourly basis.
- All customers have access to regulated tariffs, which are currently below cost- reflective level.



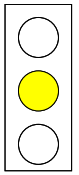
Balance responsibility and balance mechanism

- The market model which is being implemented includes a balancing mechanism, but the balancing mechanism is not yet in place
- Today, hourly metering in Serbia is available from all points of connection to transmission grid. At the moment balancing responsibility is not yet put in place in Serbia.



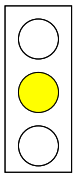
Market concentration

- State owned PE EPS holds 100% of generation. (Generation separated into 5 generation companies within PE EPS.)
- High technical import/export capacity around 2 000 MW



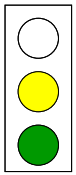
Transparency

- Wholesale prices are <u>not</u> published, as there is currently no open wholesale market.
- Available cross border capacity and flows are published and easily made available for market participants via PE EMS web site.
- Planned maintenance for transmission are published and easily made available for market participants via PE EMS web site.
- Generation and transmission outages <u>not</u> published and easily made available for market participants. Transmission outages <u>will be</u> published and easily made available for market participants in 2010.



Establishment of DAM

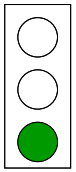
- There is a political support to establish a Serbian power exchange and couple it with the neighbouring markets.
- It is legally allowed for the TSO to allocate cross-border transmission capacity to a DAM.
- It is legally allowed to establish a local DAM.
- The responsibility for establishing a local DAM has been allocated to TSO (EMS).
- Responsibility for market monitoring and surveillance in relation to the DAM has been allocated to AERS and market surveillance will be given to JP EMS.



Main recommended actions

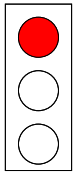
- Abolish Full supply contracts between EPS Generation and EPS Trading
- Gradually replace Full Supply contracts with base load + market based for both Supply and Eligible customers
- Make balancing responsibility mandatory and implement hourly metering
- Publish market data
- Establish NMO, commit to join RMD and establish market surveillance function

Gap analysis – UNMIK



TSO unbundling

- Legally unbundled TSO (KOSTT) established.
- Distance independent transmission tariffs established.

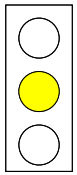


Supplier unbundling

- Supplier (KEK Supply) buys from producers (mainly KEK Generation) and traders
- No plans are established to reduce contract volumes between Public Supplier (KEK Supply) and Generator (KEK Generation).
- In 2009, a decision was taken for legal unbundling of distribution, supply and trade from "KEK" J.Sc. The separate company called "DISCO" was established. It's expecting that during the year 2010 the DISCO will be fully functional as legal unbundle company with three core license activity: distribution, supply and trade. Public supply functions will be handled by DISCO. The process of privatization of this company is in preparation. Contractual commitments how to serve Tariff Customers (full supply etc.) will be part of these negotiations.

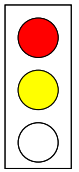
Eligibility

- Customers connected at the 10 kV level or above are eligible. Currently two customers are declared eligible
- From August 2009 all the non-household customers have the right to obtain the eligible status.
- Practical possibilities for eligible customers to enter the market are being developed. To be met by end of 2010.
- Eligible customers have the right to be supplied by the supplier of their choice with unregulated prices (contracted) or by public suppliers with regulated price.



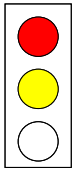
Balance responsibility and balance mechanism

- Balancing mechanism under establishment and will define which entities will have balancing responsibility.
- According to transitional Market Rules, Public Supplier is the only supplier and BRP.
- There are no obstacles in legislation of entering of the new suppliers in the market.
- Hourly metering and settlement is already done.



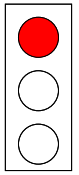
Market concentration

- KEK stands for 98% of the generation
- Main part of KEK generation sold to KEK Supply.
- Net import of electricity was 9 % of demand in 2008
- The import capacity constitutes more than 43% of the installed generation capacity of the incumbent. Reduced during summer season due to low load and high local generation



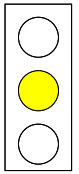
Transparency

- Wholesale prices are <u>not</u> published and easily made available for market participants. Most of the energy on the wholesale level is supplied through regulated prices and these are publicly available.
- Planned maintenance for generation and transmission are <u>not</u> published and easily made available for market participants.
- Generation and transmission outages <u>not</u> published and easily made available for market participants.



Establishment of DAM

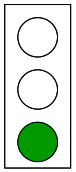
- There is a local support for establishing a regional DAM
- TheTSO does not allocate the cross-border transmission capacities
- There is no legal barriers for the TSO to establish a PX
- It is legally allowed to establish a DAM. Establishment of a balancing market is prioritized over establishment of a DAM due to few potential participants at a local DAM.
- Market Operator has the responsibility for proposing market design and DAM to ERO. Regulator has the responsibility for market monitoring and surveillance.



Main recommended actions

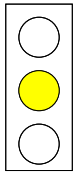
- Abolish Full supply contracts between as part of the privatization
- Gradually replace Full Supply contracts with base load + market based for both Supply and Eligible customers as part of the privatization
- Establish balancing prices in accordance with Market Rules.
- Publish market data
- Establish NMO , commit to join RMD

Gap analysis – Bulgaria



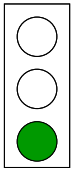
TSO unbundling

- Legally unbundled TSO.
- Distance independent transmission tariffs established (post-stamp tariff).



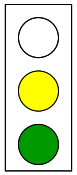
Supplier unbundling

- Plans are established to reduce contract volumes between Public Supplier and Generator.



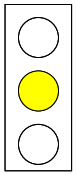
Eligibility

- All customers formally eligible.
- Large and medium sized customers exercising eligibility.
- It is practically possible for eligible customers to enter the market, i.e. necessary metering and settlement established.
- Separate grid tariffs for customers connected to the distribution grid established.



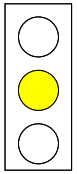
Balance responsibility and balance mechanism

- Balance mechanism, metering and settlement established.



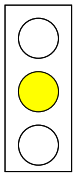
Market concentration

- State owned utility NEK with small share of generation.
- Import capacity 12% of capacity of incumbent.



Transparency

- Wholesale prices are <u>not</u> published and easily made available for market participants.
- Available cross border capacity and flows published and easily made available for market participants.
- Planned maintenance for generation and transmission are published and easily made available for market participants.
- Generation and transmission outages published and easily made available for market participants.



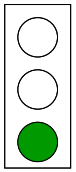
Establishment of DAM

- There is a political support to establish a regional DAM.
- It is legally allowed for the TSO to allocate cross-border transmission capacity to a DAM.
- It is legally allowed to establish a DAM.
- The responsibility for establishing a DAM has not been allocated.
- Responsibility for market monitoring and surveillance has not been allocated.

Main recommended actions

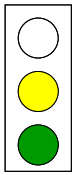
- Gradually replace Full Supply contracts with base load + market based for Eligible customers
- Publish market data
- Establish NMO , commit to join RMD

Gap analysis – Romania



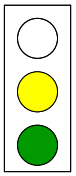
TSO unbundling

- TSO legally unbundled.
- Distance independent transmission tariffs established.



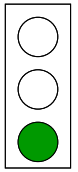
Supplier unbundling

- DSOs with more than 100 000 customers are legally unbundled from the suppliers.



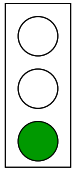
Eligibility

- All customers eligible.
- Mostly large and medium size industries exercise eligibility.
- It is practically possible for eligible customers to enter the market, i.e., necessary metering and settlement established.
- Separate grid tariffs for customers connected to the distribution grid established.



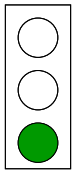
Balance responsibility and balance mechanism

- Balancing mechanism established.
- Hourly metering available for participants on the Balancing market.



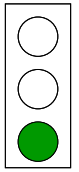
Market concentration

- Size of 3 largest generators 49,8%.
- There are 8 generating companies with at least 5% share of the installed generation capacity in the jurisdiction.
- Import capacity 36% of capacity of incumbent. (Incumbents capacity 6 274 MW, Average import capacity 2 250 MW).



Transparency

- Wholesale prices are published and easily made available for market participants.
- Available cross border capacity and flows published and easily made available for market participants.
- Planned maintenance for generation and transmission are published and easily made available for market participants.
- Generation and transmission outages published and easily made available for market participants.



Establishment of DAM

- There is a political support to establish a regional DAM.
- A national DAM (OPCOM) is established.
- Responsibility for market monitoring and surveillance given to national regulators and national market operator.

Main recommended actions

- Gradually replace Full Supply contracts with base load + market based for Eligible customers
- Publish market data
- commit to join RMD