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**HYDRO POWER AND ENERGY
PLANNING PROJECT (HPEP)**

Aspects of a PX Node at Georgia/Turkey Border

October, 2013



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New Electricity Market Law

- New Turkish Electricity Market Law NO:6446 was enacted on March, 2013, which repeals and replaces all provisions of previous Electricity Market Law NO:4628 since 2001;
- Goal of new EML is to establish a financially strong energy market, operating subject to private law provisions in a competitive environment, and securing the supply of sufficient, safe, uninterrupted, economical, environmentally friendly, and high-quality electrical energy.
- New EML introduces various novelties, one of which is the concept of Organized Electricity Wholesale Markets run by new Market Operator – EPIAS (Energy Markets Operation Cooperation)



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What EPIAS will do

- According to New Electricity Market Law organized wholesale markets (DAM, intra-day market, BM, ancillary services market, OTC markets, derivatives market) are operated by EPIAS.
- Perform studies for the establishment of new markets in organized wholesale electricity markets in line with market progress and submit such studies to the EMRA;
- Determine and submit to the EMRA market operator tariffs in accordance with the principles and procedures to be determined by the EMRA;
- Conduct the financial settlement operations of organized wholesale markets operated by TEIAS.
- EPIAS will start operating as an exchange, initially for the electricity market, and subsequently will cover other markets, such as natural gas, oil and carbon.



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EPIAS: Ownership structure

- EPIAS is expected to commence operations by 2014
- EPIAS will be established with
 - 30% share of EPIAS
 - 30% share of Borsa İstanbul
 - 40% share of private sector partnership structure.



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Proposal for Georgian/Turkish PX Node

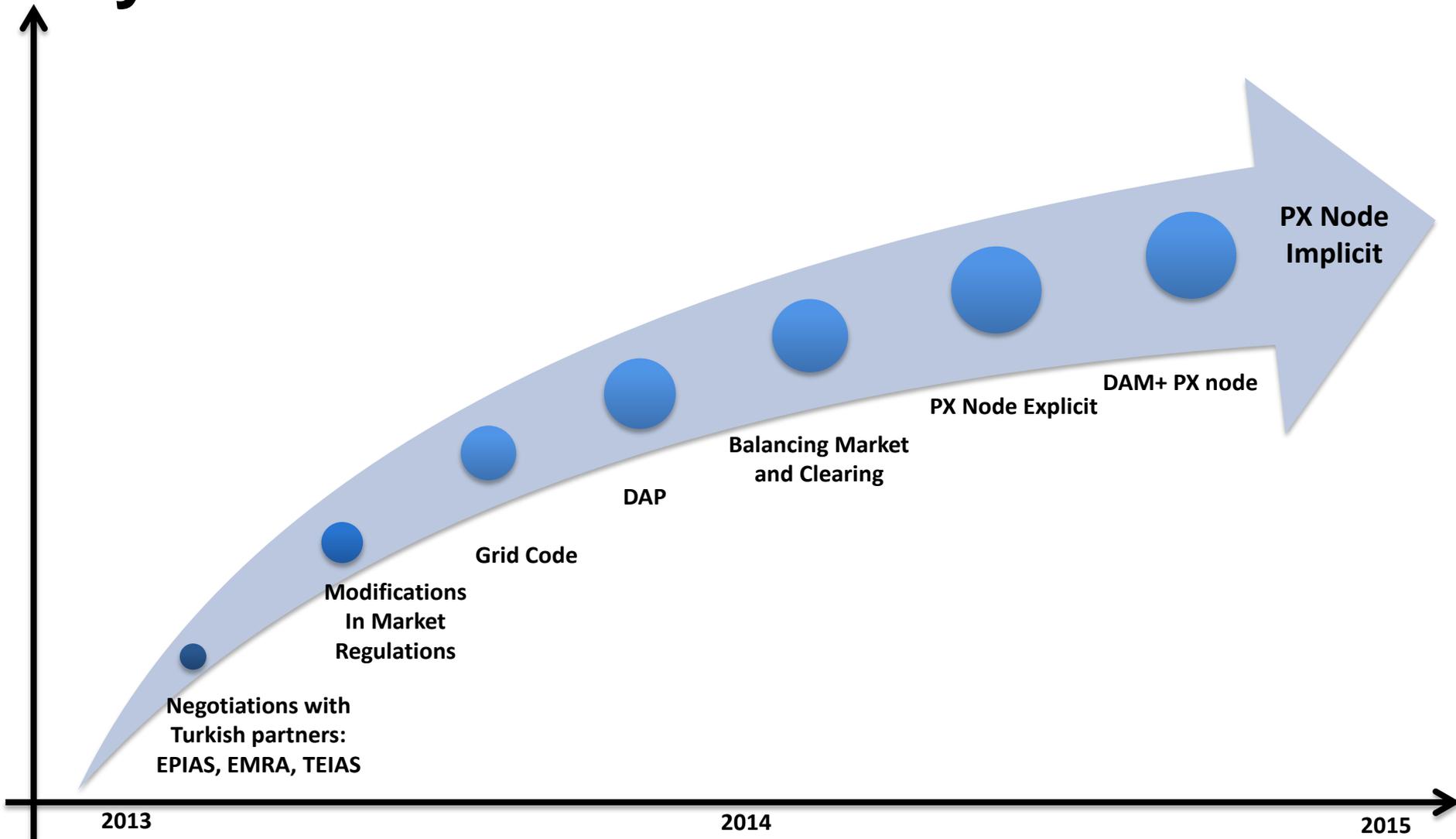
- The purpose of Akhaltsikhe-Borchka HVDC line is to facilitate cross-border flows of electricity between Georgia and Turkey (with potential further transit to Europe), and to provide access to higher priced markets to encourage the development of renewable resources (particularly hydroelectric projects) in Georgia.
- There is a need to allocate this capacity of the line among potential users
- The recommended auction process is implicit auctions. **However is not feasible at this time because such auctions require day-ahead markets in both countries.**



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Key Milestones





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Path towards Georgian/Turkish PX Node

- Each market operator/PX is responsible for:
 - Receiving bids/offers from its own market participants
 - Running its own software, taking into account the bids/offers received from the other PX
 - Determining and publishing market results
- The market operators/PXs are jointly responsible for:
 - Sharing data about bids/offers (in anonymous form) and ATC
 - Adopting a common matching algorithm
 - Checking data consistency (prices/volumes of imports/exports)
 - Defining import/export volumes resulting from the market coupling



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Alternative Approaches Absent a Day-Ahead Market

- Bilateral energy contracting between Georgian exporters/importers and Turkish importers/exporters for day-ahead transactions. Parties would obtain interconnection capacity rights through a separate explicit auction process.
- Establishment of a “bulletin board” where market participants submit prices at which they are willing to buy/sell electricity at the border. This is a refinement to bilateral contracting as it makes prices more visible to buyers and sellers and encourages a more liquid market.
- Establishment of a special purpose power exchange whose activity is to solicit bids/offers for transactions at the border, clear those transactions (up to ATC for the day), and act as a clearinghouse for settlement. This is a move toward implicit markets because cleared transactions would receive interconnection capacity rights.
- Implicit auctions when a day-ahead market is in place in Georgia.



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