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

# **USAID Hydro Power and Energy Planning (2013-2014)**

**Activities, Results, Impacts and Next Steps**





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# **I. Background**

# **II. HPEP Activities & Results**

# **III. Impacts**

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# I. Background



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# HPEP – Basic Facts

- 1 year contract (Sept. 1, 2013 – Aug. 31, 2014)
- ~\$2.96 million budget
- 3 Main Tasks for ETM and GEMM 2015
  - Institutional and Human Capacity Building
  - Implementation of the Rules, Regulations, Procedures and Processes Developed
  - Support to Investor Outreach



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## **HPEP – Basic Facts**

- **21 local staff** – engineers, legal advisors, financial analysts, economists, environmentalists, communications specialists and **three interns**
- **6 of the local staff were hired into GoG counterparts**
- **Nine local subcontractors** – private firms, NGOs and association
- **One subcontractor in Turkey**
- **One full time and 14 part time expats** – U.S., Europe and CIS experts



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# Cooperation with Donor Programs

- EU's Regulatory Twinning Project (e-Control)
- USAID's regional EC-LEDS (TetraTech)
- USAID's EC-LEDS (Winrock)
- USAID's Regulatory Partnership (NARUC)
- EU's INOGATE Project (Rombol)
- EBRD's Distribution Tariff Project (KEMA)
- USAID's HICD Plus (Chemonics)
- USAID's BSTP (USEA)



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# Resolving Market Design Failure

- Identified Obstacles
  - No feed-in tariff, but GoG wants winter generation to stay in Georgia
  - Government prefers no sovereign guarantees
  - No framework for a competitive electricity market
  - Insufficient understanding of competitive market operations
- HPEP supported the new electricity market design (GEMM 2015)
  - Legal, regulatory, contractual, structural, HICD



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## **II. HPEP Activities & Results**



## Diverse HPEP Activities

- Supported legal and regulatory reforms
- Provided HICD to the regulator, Energy Ministry, TSO, public trader and Market Operator
- Developed software for competitive trading using cloud technology
- Developed National Energy Policy and Energy Strategy Whitepapers
- Developed a CBA model for HPP development on watersheds supported by NGOs



# Task 1 Key Activities

- HICD for GNERC, ESCO and GSE
  - Re-organization of GNERC
  - Strategic planning for GNERC
  - Strategic Planning Support for MO
  - Performance Indicators for GSE
- Study Tour to Europe
- Stakeholder Meetings (Jointly and Separately)
- EMRA and GNERC joint meetings
- Training Course for Market Players
- Steering Committee Meetings and Retreat



## Task 2A Key Activities

- Electricity and Natural Gas Law Amendments
- Market Rules modifications consistent with GEMM 2015
- Modifications to the Ministry's MoU process for investor selection of new HPP sites
- Transmission, Metering and Distribution Codes Development (technical and legal support)



## Task 2A Key Activities

- **USoA** for the entire electricity sector
  - Chart of Accounts
  - Instructions to Chart of Accounts
  - Licensee Reporting Forms
  - Instructions to the Reporting Forms
  - Conversion Map (for historical accounting information)
  - Capacity Building for GNERC and Licensees' staff



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## Task 2A Key Activities

- Several workshops with GSE and ESCO concerning MAP/DAP process and procedures
- MAP/DAP software for day ahead planning using cloud technology
- Introduction of the Georgian price node on Turkey's power exchange platform



## Task 2A Key Activities

- Harmonization of legislation with Turkey
  - Electricity Supply Agreement
  - TSO to TSO Agreement
  - Transmission Grid Code
- TSO-Transco Agreement to create legal construct for a single TSO in Georgia
- Proposed process for the TSO's Ten Year Network Development Plan



## **Task 2B Activities**

- Whitepaper on Energy Policy
- Whitepaper on Energy Strategy
- Household energy end-use survey
- CBA model for HPP development on the Enguri watershed
- VOLL analysis
- Updated MARKAL Georgia Model
- Trained MoE Analytical Department staff on MARKAL Georgia



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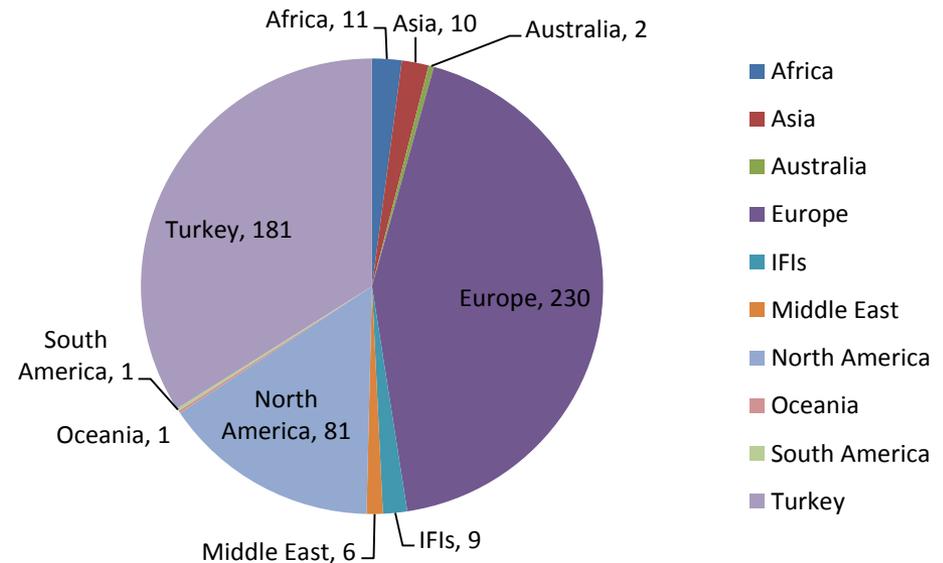
## Task 3 Key Activities

- Project Launch
- Support to Potential Investors (developers, IFIs)
- Support to MoE on Revisions to MoU procedures
- International Conference (160 participants)
- Young Energy Leaders Conference with emphasis on gender equality in the energy sector
- Updated Energy Map
- [www.hydropower.ge](http://www.hydropower.ge) and the GEMM Book
- Newsletters, success stories, press releases



# Task 3 -Investment Promotion

- Reach and regularly touch base with more than 600 potential investors. HPEP makes at least bi-weekly mass announcements.
- HPEP uses LinkedIn for social media access





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## **III. HPEP Impacts**



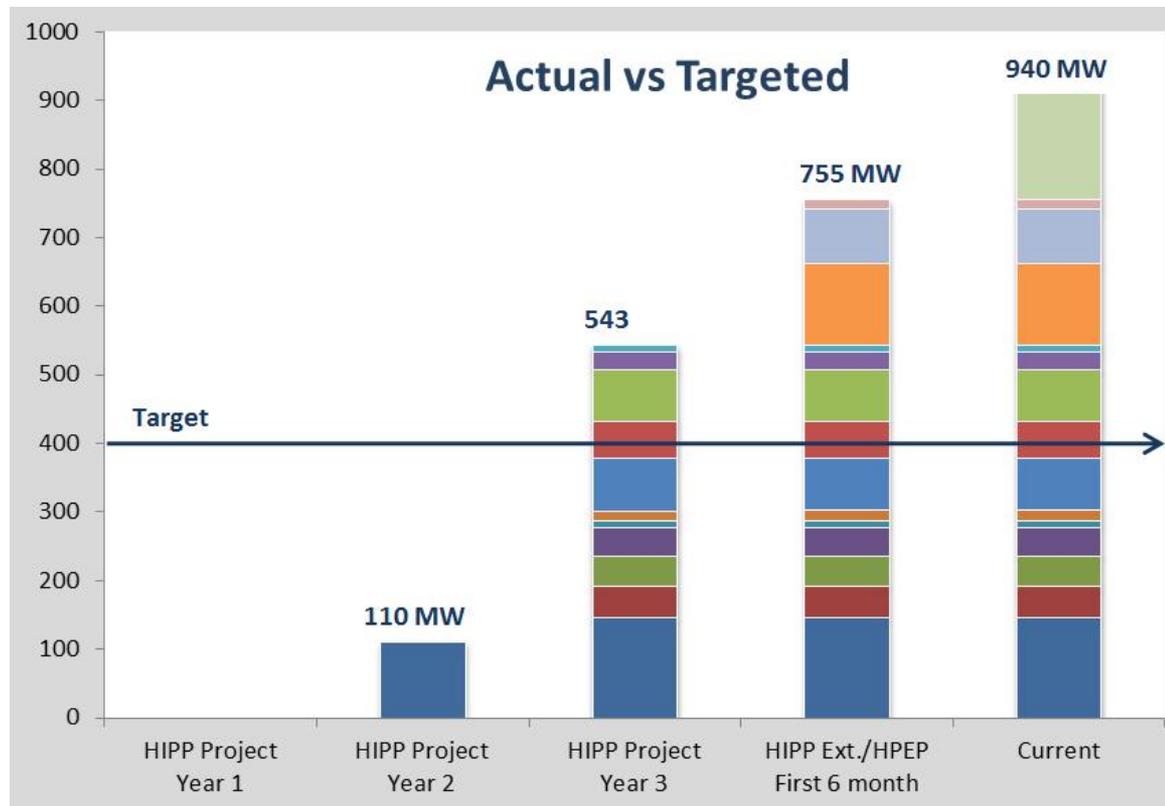
# Impact

**Key support by HIPP/HPEP led to the first HPP project financing in the country (\$241 million)**

- **E&G** Law was modified to increase power of GENRC
- **Market Rules** were adopted to include interconnection capacity allocation and congestion management procedures
- **Day ahead scheduling** was started by GSE
- **Transmission Grid Code** was adopted – harmonized with Turkish grid code
- Improvements to the **Transmission & Dispatch Agreement**
- Consultations with investors and lenders on GEMM 2015 and existing power market

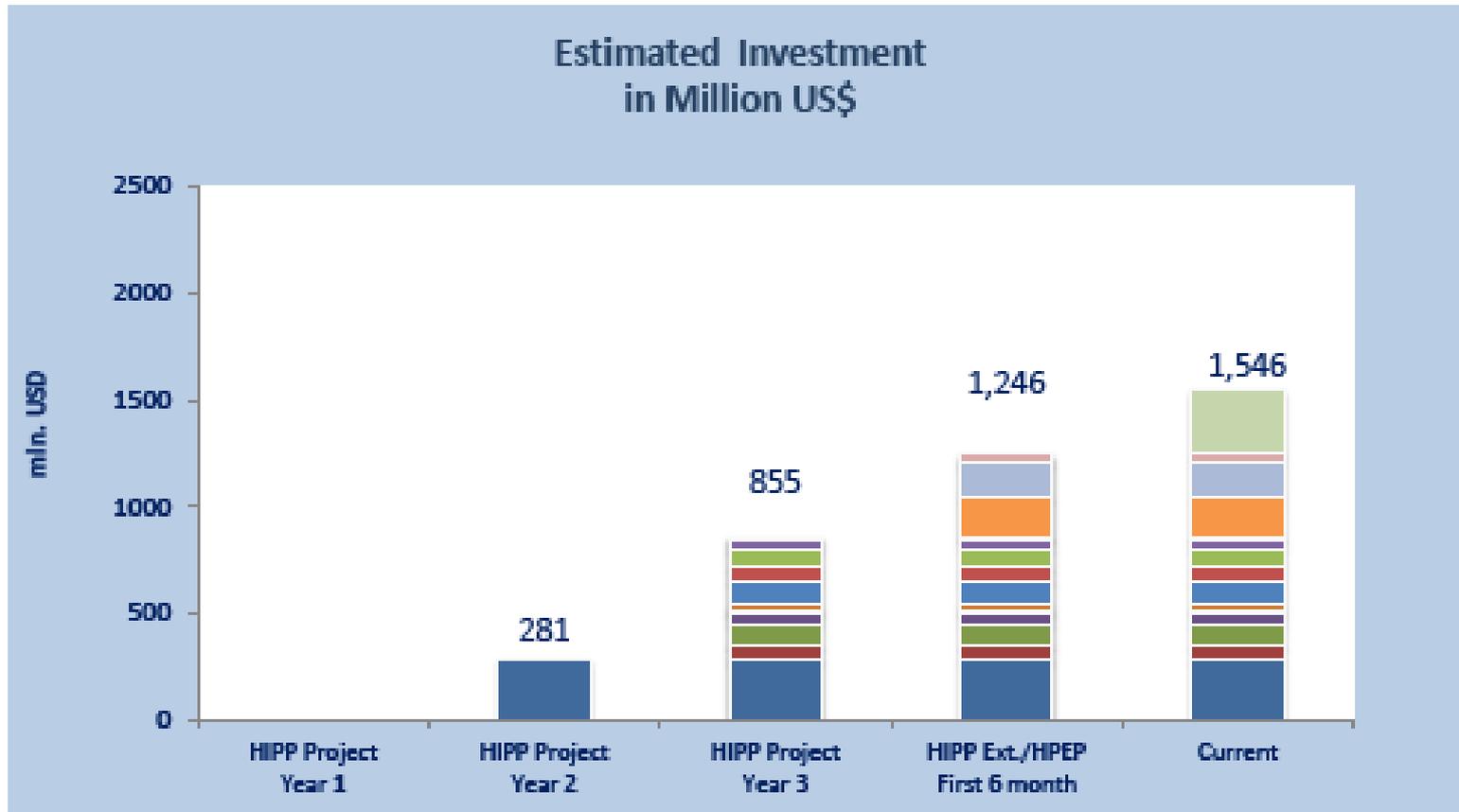
# Impacts

**More than 900 MW run-of-river HPPs with signed MoUs**

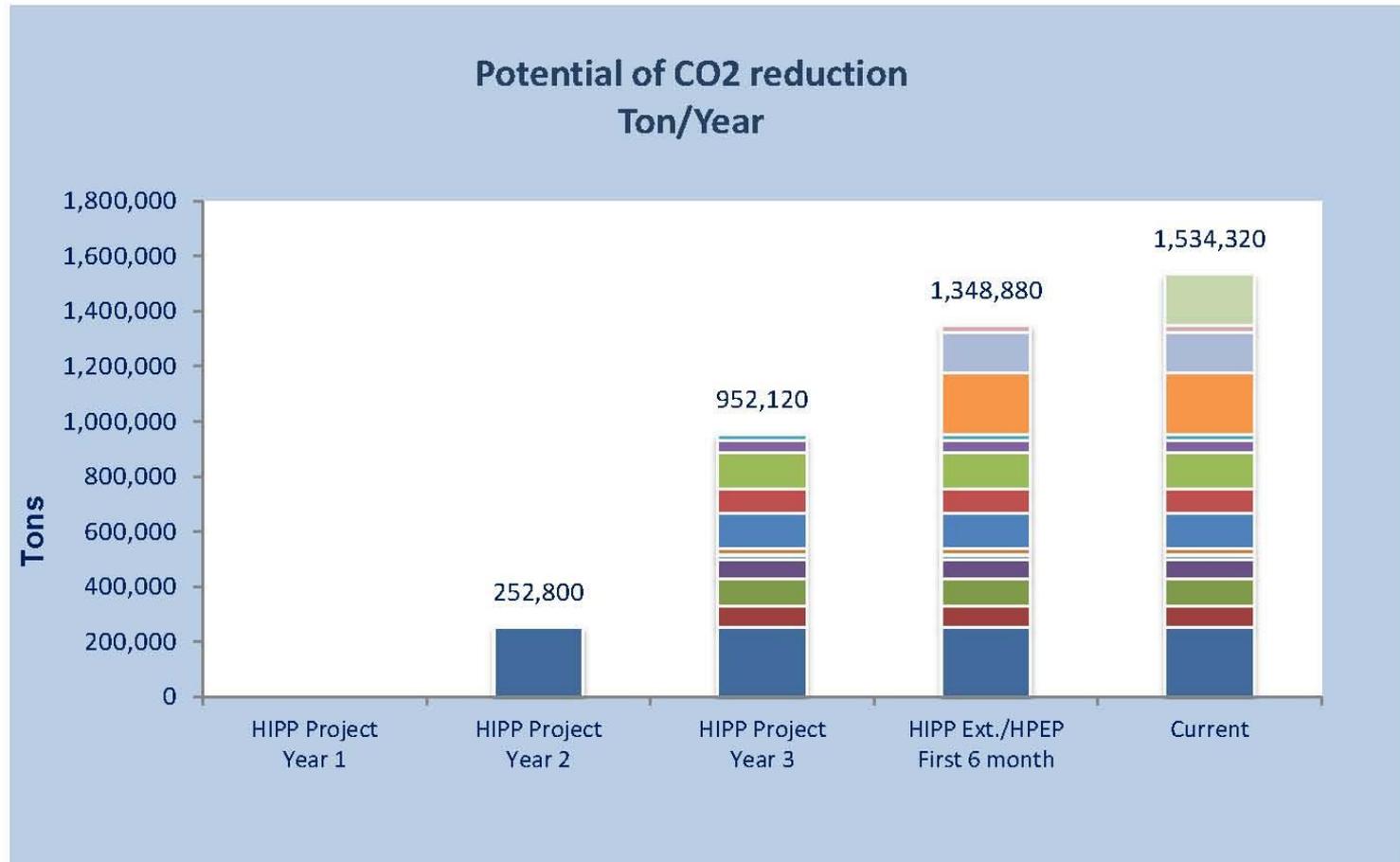




# Potential Investment from new r-o-r HPPs



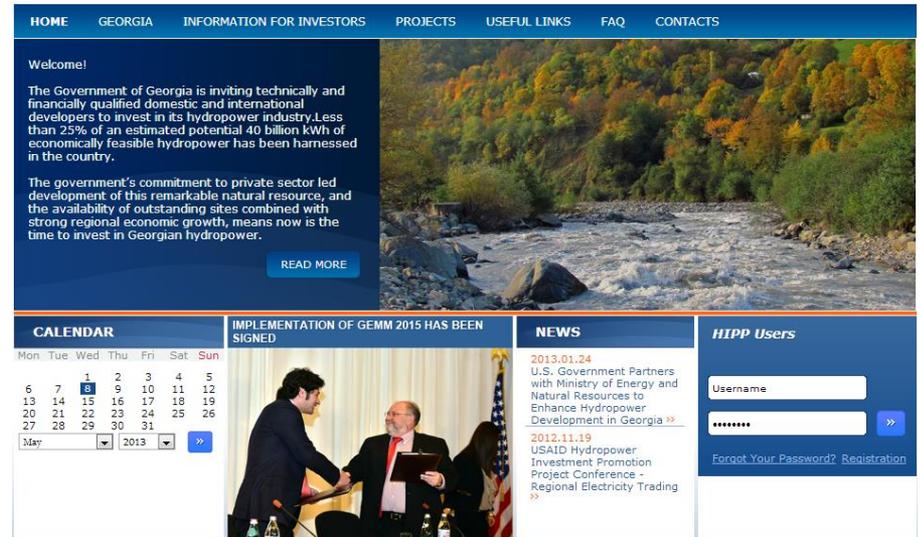
# Potential Reduction of CO<sub>2</sub>



# Impact

## Investor Interest in Georgia

- Continued investment promotion started under HIPP
- Project website hits/week average 350, with a maximum to date over 1100.
- Every week several investors were in HPEP offices and quite constant email requests



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Welcome!

The Government of Georgia is inviting technically and financially qualified domestic and international developers to invest in its hydropower industry. Less than 25% of an estimated potential 40 billion kWh of economically feasible hydropower has been harnessed in the country.

The government's commitment to private sector led development of this remarkable natural resource, and the availability of outstanding sites combined with strong regional economic growth, means now is the time to invest in Georgian hydropower.

[READ MORE](#)

**CALENDAR**

Mon	Tue	Wed	Thu	Fri	Sat	Sun
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

May | 2013

**IMPLEMENTATION OF GEMM 2015 HAS BEEN SIGNED**



**NEWS**

**2013.01.24**  
U.S. Government Partners with Ministry of Energy and Natural Resources to Enhance Hydropower Development in Georgia >>

**2012.11.19**  
USAID Hydropower Investment Promotion Project Conference - Regional Electricity Trading >>

**HIPP Users**

Username

\*\*\*\*\*

[Forgot Your Password?](#) [Registration](#)





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## TOP INVESTORS

**KFW**

Bank aus Verantwortung

 **Statkraft**



ANADOLU GROUP



Clean  
Energy  
Group



CEZ GROUP



**ÇALIK ENERJİ**



**edf**  
ENERGY

 **Limak**

 **ALARKO**  
ENERGY GROUP

 **IFC** | International  
Finance Corporation  
World Bank Group

 **BORUSAN**



European Bank



International Power



The World Bank



**TATA POWER**

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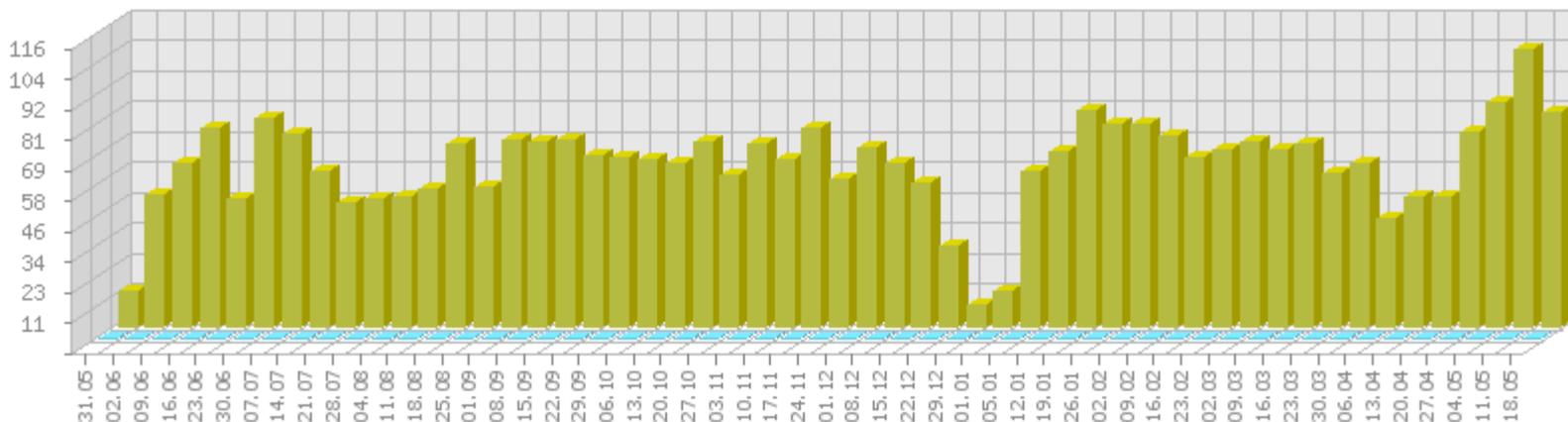
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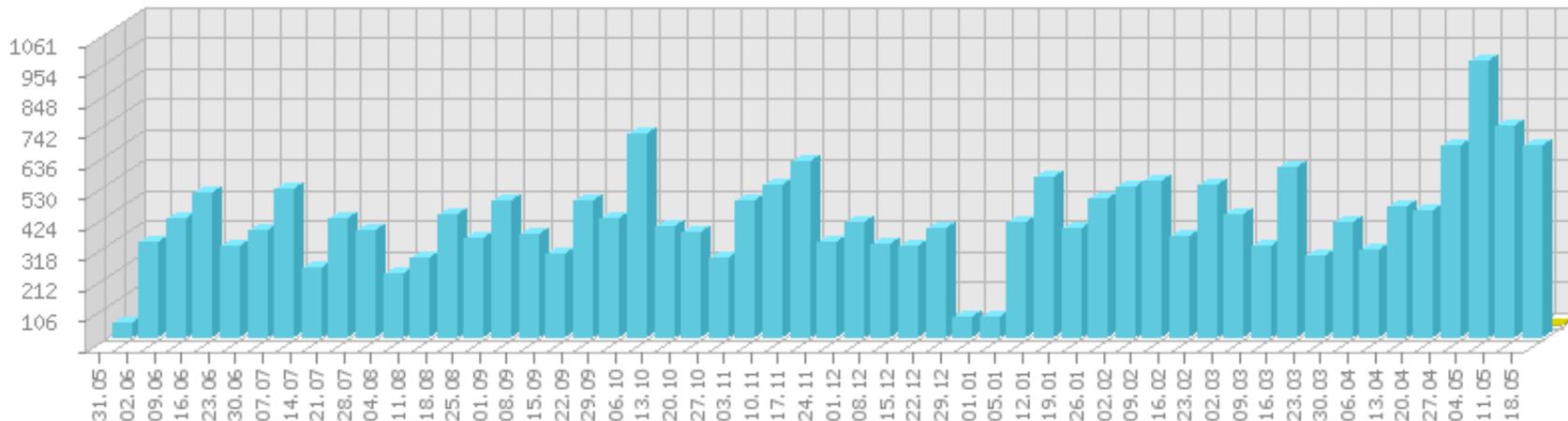
**ALPIQ**



## Number of Unique Users (previous year, sum of weekly data)

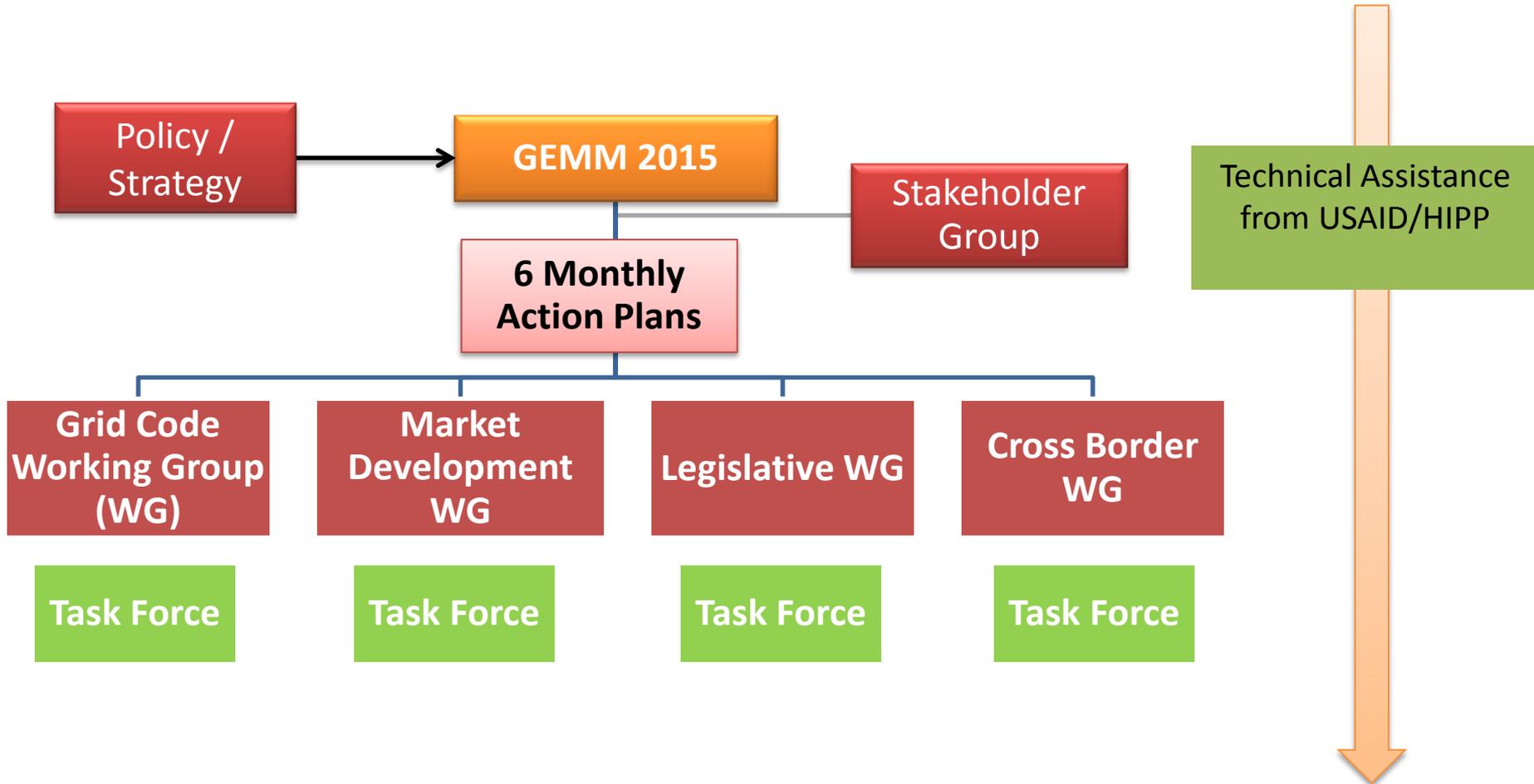


## Number of Hits (previous year, sum of weekly data)

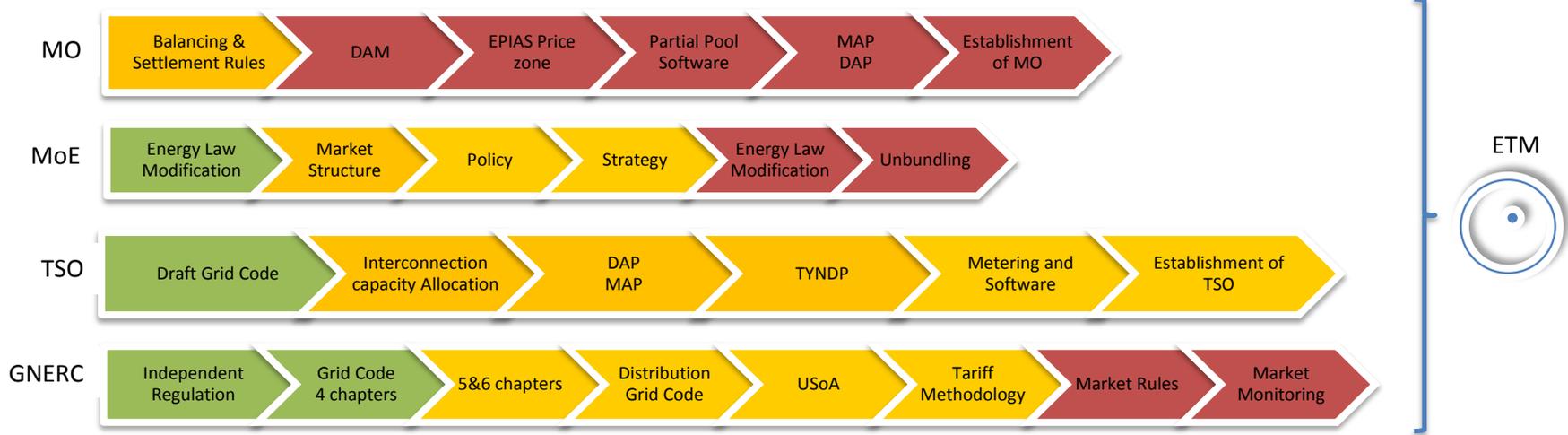




## Organization of MoE Led Implementation of GEMM 2015



# Status of Activities



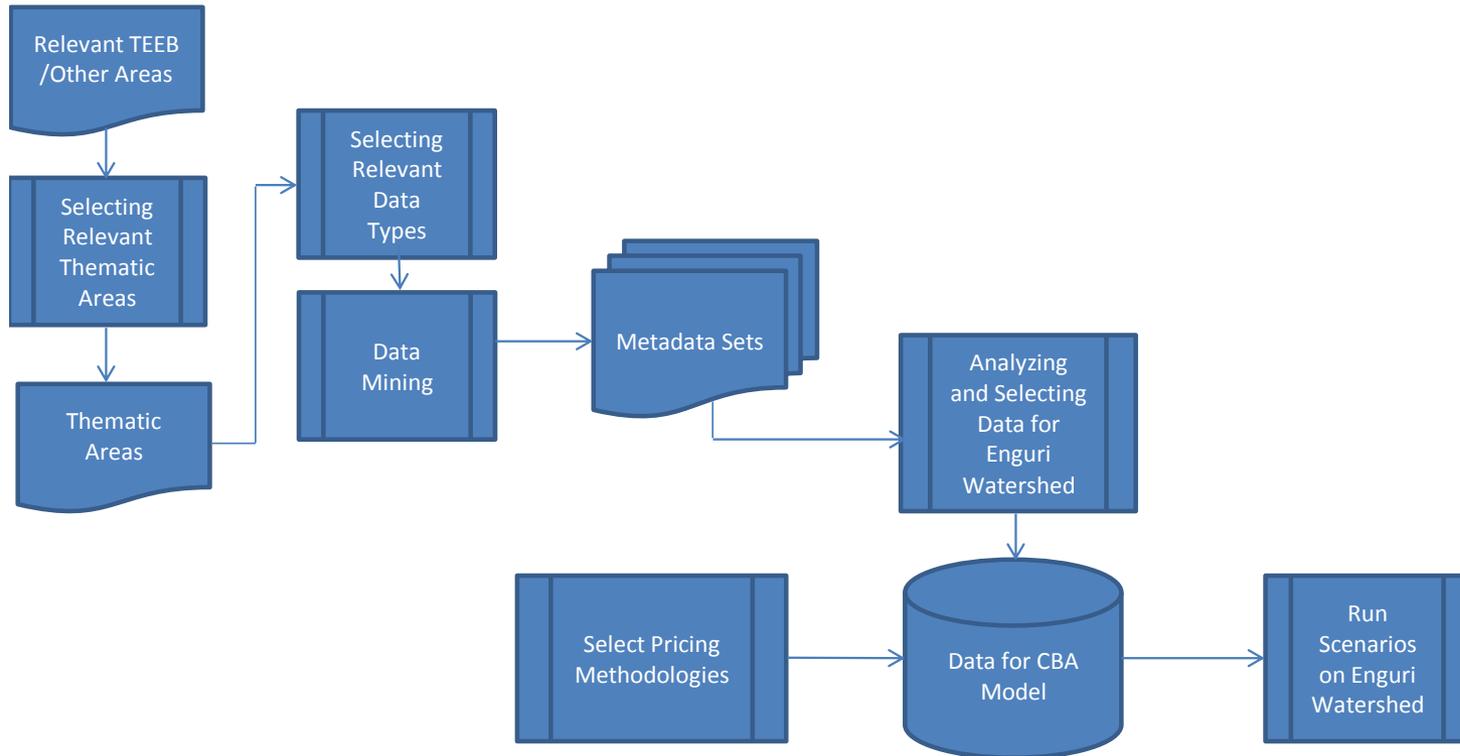


# CBA Model for HPP Development

- HPEP is supported NGOs and Ministry of Environment in developing a CBA for HPP Development in Georgia
- CBA is used by Government on policy decisions for watershed development
- A novel model based on TEEB with environmental and social impacts monetized



### HPP Development Template CBA Model





# Cross-cutting Impacts

- **Gender** – special emphasis on development of young professionals into energy sector leaders
- **Environment** – involvement of environmental NGOs and other stakeholders in the decision making process, improving the EIA process for new energy projects, environmental analysis becomes a critical input into national energy strategy, awareness on de-forestation
- **Capacity Building** – Increased knowledge of competitive electricity markets



## HPEP Impacts

- Worldwide investor awareness of Georgia as a solid HPP investment destination
- Competitive market design in place and being implemented
- Limited non-recourse financing used, with no Government guarantees
- National Energy Policy and Strategy

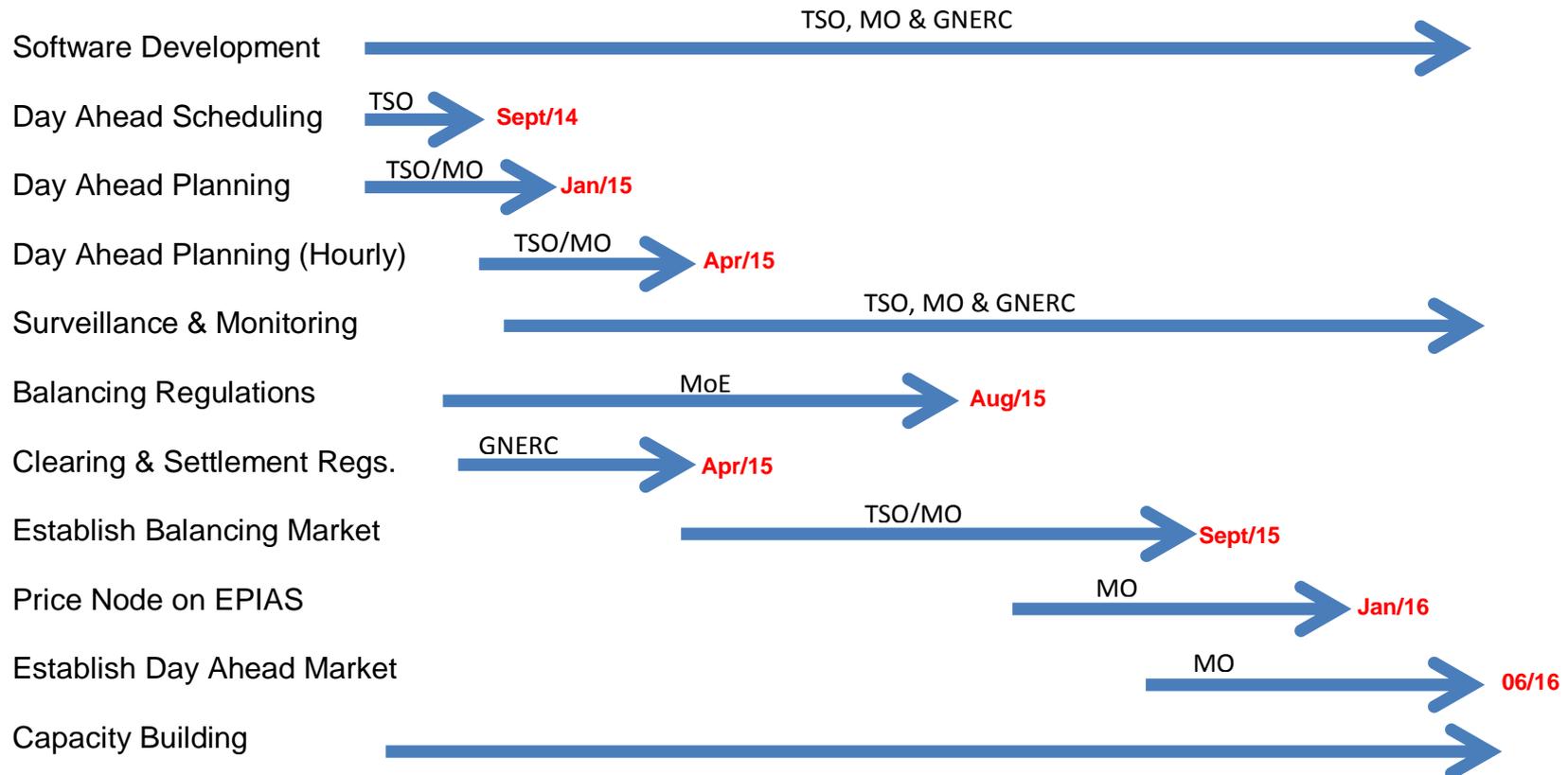


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## IV. Next Steps

# Critical Path for Establishing the Electricity Trading Mechanism





## Additional Key Next Steps (MoE)

- Finalize the energy strategy with in the 3-year plan specifying development of the competitive electricity market
- Periodic revisions to the Electricity and Natural Gas Law to implement each new phase of the market – structure and operations



# Additional Key Next Steps (MO)

- Develop the MO Department within ESCO as a functionally independent entity
- Revise the market rules to allow for transition to fully competitive electricity market
- Negotiate and agree on cross border trading, settlement and clearing mechanisms with EPIAS/PMUM (Turkey's Power Exchange and Balancing Market Operator)



# Additional Key Next Steps (TSO)

- ❑ Transform GSE's dispatch operations into a contractually-established single Transmission System Operator in Georgia.
- ❑ Develop a state-of-the-art wholesale market metering system that is non-human intrusive
- ❑ Develop the Ten Year Network Development Plan 2015-2018
- ❑ Develop the ancillary services market including the electricity capacity market
- ❑ Establish rules with TEIAS (Turkey's TSO) on the interconnection capacity allocation on annual, monthly, and day ahead basis to maximize utilization of the Black Sea Transmission line



## **Additional Key Next Steps (GNERC)**

- ❑ Implementation of the Uniform System of Accounts for the electricity sector and Transmission tariffs are set based on actual costs
- ❑ Chapters 5 & 6 of Electricity Transmission Grid Code, Distribution Code and Metering Code adopted
- ❑ Switching Rules, Supplier of Last Resort Rules and Market Monitoring Rules Adopted
- ❑ GNERC strengthened to adopt and regulate market rules, to monitor the competitive electricity market and to sanction when appropriate



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