

# *SEE Regional Energy Demand Planning*

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## *Overview of Project and RES*

IEA-ETSAP

1<sup>st</sup> Semi-annual Workshop - Annex X

Hosted by the UK Energy Research Centre  
Policy Studies Institute, AEA Technology and the Department of  
Trade and Industry at St Anne's College in Oxford, UK  
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## *Presentation Outline*

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- SEE-REDP Purpose and Participation
- Overview of the Tools and RES
- Preliminary Work Plan Components and Timing



## *Motivation*

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- Demand Analysis is the first step in energy policy and in energy investment planning.
- The recent Generation Investment Study (GIS, PWC) for the power sector developed electricity demand projections that drive the capacity expansion plan.
- The implementation of the GIS study revealed in the opinion of many stakeholders that an on-going regional effort to refine energy demand projections would greatly improve the discussions over needed investments in the region, consistent with ECSEE principles of the regional efficiencies of a single regional market.



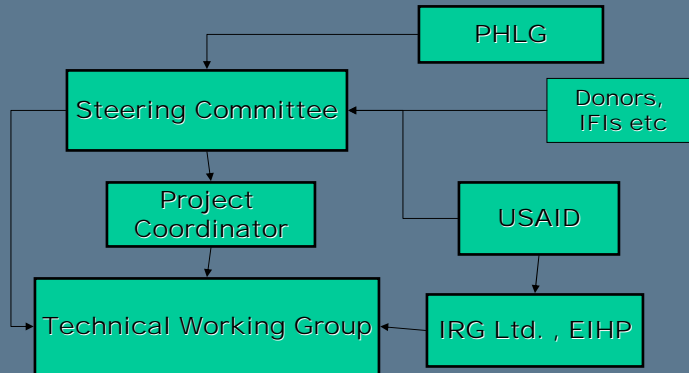
## *Goals*

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- Foster improved energy demand planning capability in the region, in support of the Athens Process to establish ECSEE.
- Establish an institutional vehicle to discuss and update information using a consistent framework and tools, for purposes of policy planning and investment decision-making.
- Examine future investment opportunities in energy efficiency, renewables and co-generation, and changes in patterns of home heating, including district heating and increased use of natural gas.



## Organization



## Guiding Principles

- Establishment of a network regional energy experts and policy advisors
- Draw on previous undertakings and share other SEE country experiences and information
- Adopt a common philosophy and “toolbox” for organizing the energy demand planning process
- Compliment other initiatives in the region

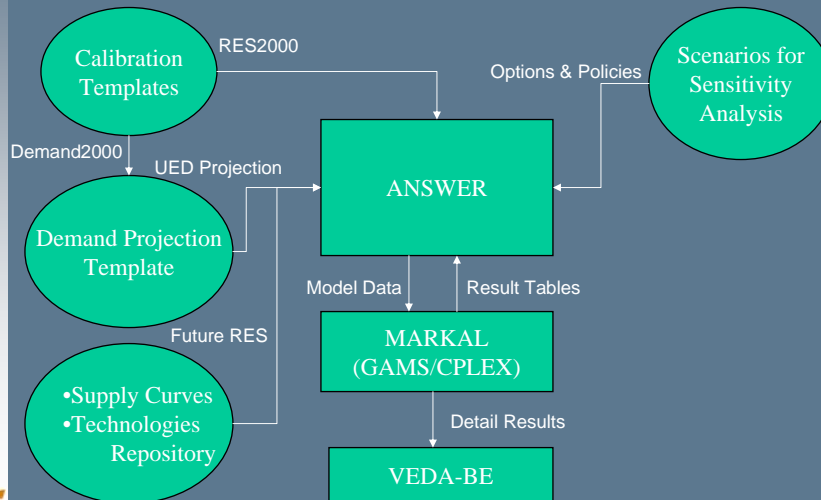


## SEE-REDP Participating Institutions

Participants	Steering Committee	TWG
Albania	National Energy Agency	National Energy Agency
Bosnia	Ministry of Foreign Trade and Economic Relations	Ministry of Foreign Trade and Economic Relations TSO {pending}
Bulgaria	Ministry of Economy and Energy	Ministry of Economy and Energy
Croatia	Ministry of Economy, Labour and Entrepreneurship,	Ministry of Economy, Labour and Entrepreneurship, Energy Institute Hrvoje Pozar Croatian Electric Power Utility
UNMIK	Ministry of Energy and Mining	Ministry of Energy and Mining Energy Regulatory Office
Macedonia	Electric Power Company of Macedonia	Electric Power Company of Macedonia
Montenegro	Ministry of Economy	Ministry of Economy Electric Power Company
Romania	National Power Grid Company - Transelectrica	National Power Grid Company - Transelectrica
Serbia	Ministry of Energy and Mining	Electric Power Industry of Serbia



## Organization of the Toolkit



## *RES Overview*

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- Demand-side detail necessary to effectively carry-out energy demand planning
- Very simplified representation of the supply and upstream sectors, including no explicit depiction of the power sector, with expanded representation for
  - ❑ district heating options
  - ❑ natural gas supply
  - ❑ renewables



## *RES Components – Demand Sectors*

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- Agriculture, 1 sector with fuel-based device breakout
- Commercial, 8 sub-sectors with 2 building sizes for heating/hot water/cooling
- Industry, 7 sub-sector with 3 service needs of low/high-temperature heat and mechanical drives
- Residential, 10 sub-sectors with 3 building types and 2 distribution system for heating/hot water/cooling
- Transportation, 1 generalized demand for electricity used for public transportation

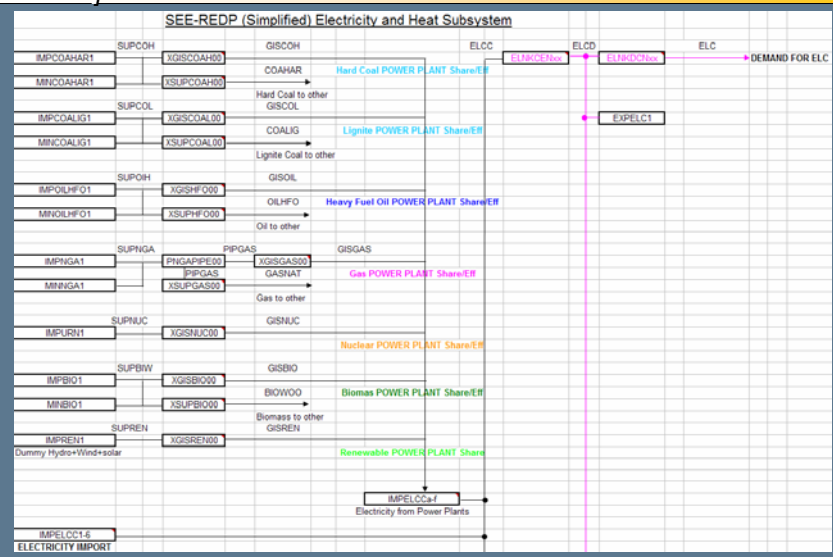


# RES Components – Residential

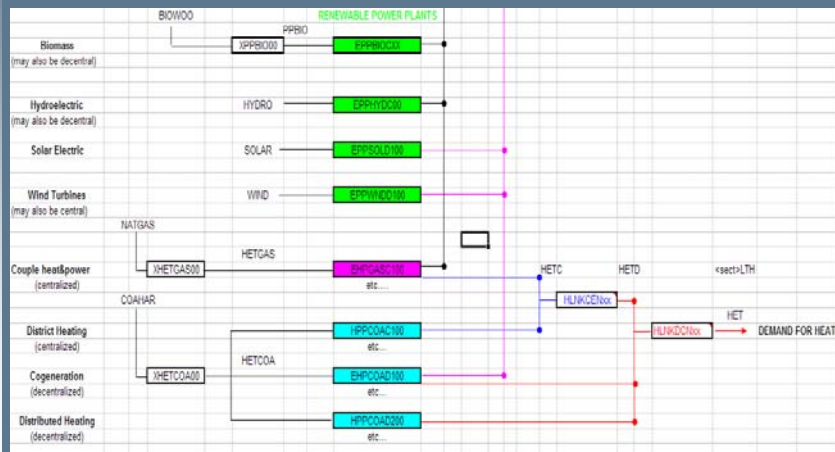


\* as \*\* indicates that applies to all building types equally, and thus just a single group is modeled  
 \*urban central houses and apartments  
 \*urban/rural local houses and apartments  
 [Note: other fuels may feed certain demands in various countries]

# RES Components – Simplified Electric Sub-sector



## RES Components – Simplified Renewables, CHP & Heat Sub-sector



## Proposed Work Plan – Phase I

- Establish the REDP SC and TWG, along with a project regional coordinator
- Hold Data and Calibration workshop
- Obtain the basic energy balance data and develop the necessary breakout thereof corresponding to the SEE-REDP RES
- Augment the SEE-REDP workbooks for each country situation
- Calibrate the base (1<sup>st</sup>) year
- Report on progress to date
- Completion December 2005 (but running late)



## *Proposed Work Plan – Phase II*

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- SC define the policies to be examined
- Development of the Reference Scenario – Distribute in Dec in Prep for WKSP
  - ❑ Develop the demand drivers and relationship to the sector demand for energy services
  - ❑ Obtain price projections for the various energy carriers
  - ❑ Establish the “library” of future technologies, adapt for each country
  - ❑ Represent any existing policies and known projects
- Hold Reference Scenario and Modeling workshop (Feb 2006)
- Exercise the Reference Scenario and refine the model assumptions/behavior as necessary
  - ❑ 2x mini-workshops (north/south) – perhaps to exercise Reference
- Report on progress to date, including publication of data
- Completion June 2006



## *Proposed Work Plan – Phase III*

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- Select up to 3 alternate scenarios to be examined by each country
- Hold Assessment workshop
- Represent each scenario to the model
- Conduct assessment, refining model assumptions as necessary
- Interim progress report Sept 2006
- Major project report with each country’s assessment
- Completion December 2006





## *Proposed Work Plan – Phase IV*

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- Identify Scope of Phase IV
  - ❑ Integrate the country models
  - ❑ Depict the power and transportation sectors to realize full integrated energy system planning models
  - ❑ Introduce price/income elasticities to endogenize useful energy demands
- Integrate (and depict trade patterns), expand RES and/or introduce elasticities
- Conduct assessment, refining model assumptions as necessary
- Hold Integration and Analysis workshop
- Transfer integrated SEE-REDP model to a local host institutions and other interested participating institutions, if developed



Project report on the integrated assessment  
Completion Sept 2007