Introduction to LEAP

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- Basics
- User interface
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Basics

"Long-range Energy Alternatives Planning system"

- **Identity**

  Scenario-based modelling software for energy planning and GHG mitigation assessment (download from www.energycommunity.org)

- **Use**

  Build models of different-scale energy systems

  Forecast GHG and local air pollutant emissions

- **Examples of use**

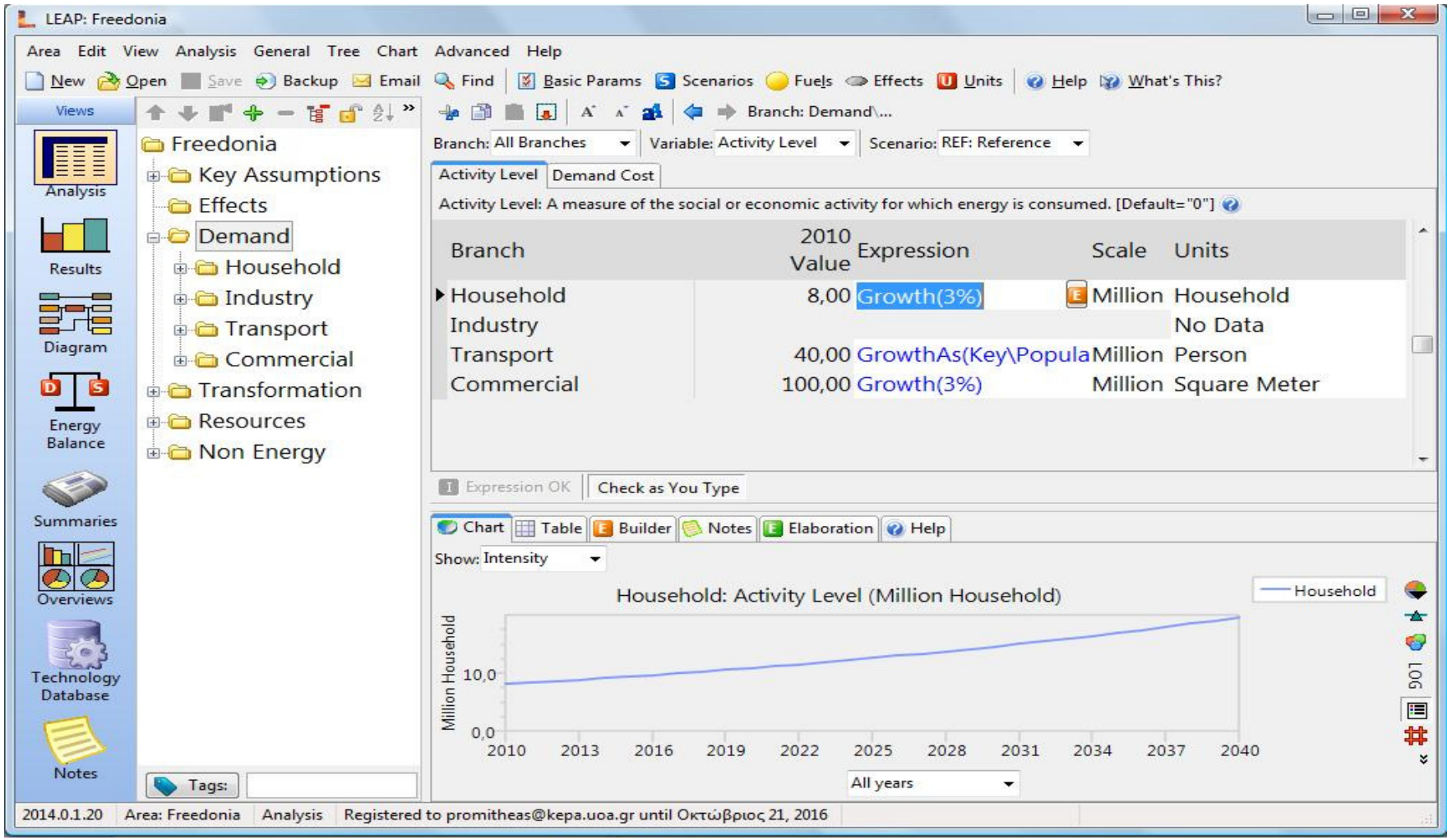
  National Communications to UNFCCC, national strategies, funded projects

- **Characteristics**

  Low initial data requirements

  User-friendly, but needs training

User Interface



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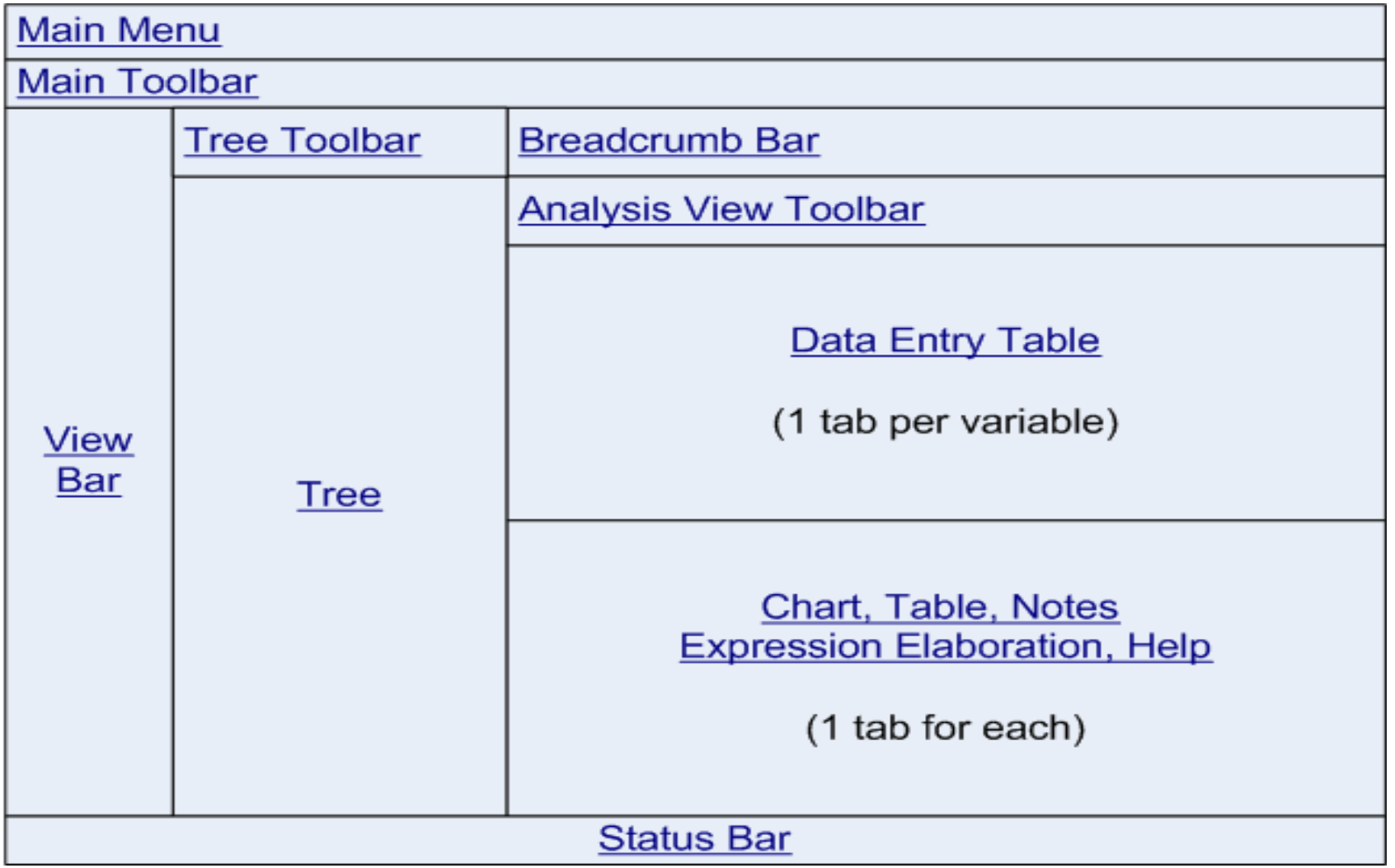
User Interface – structure



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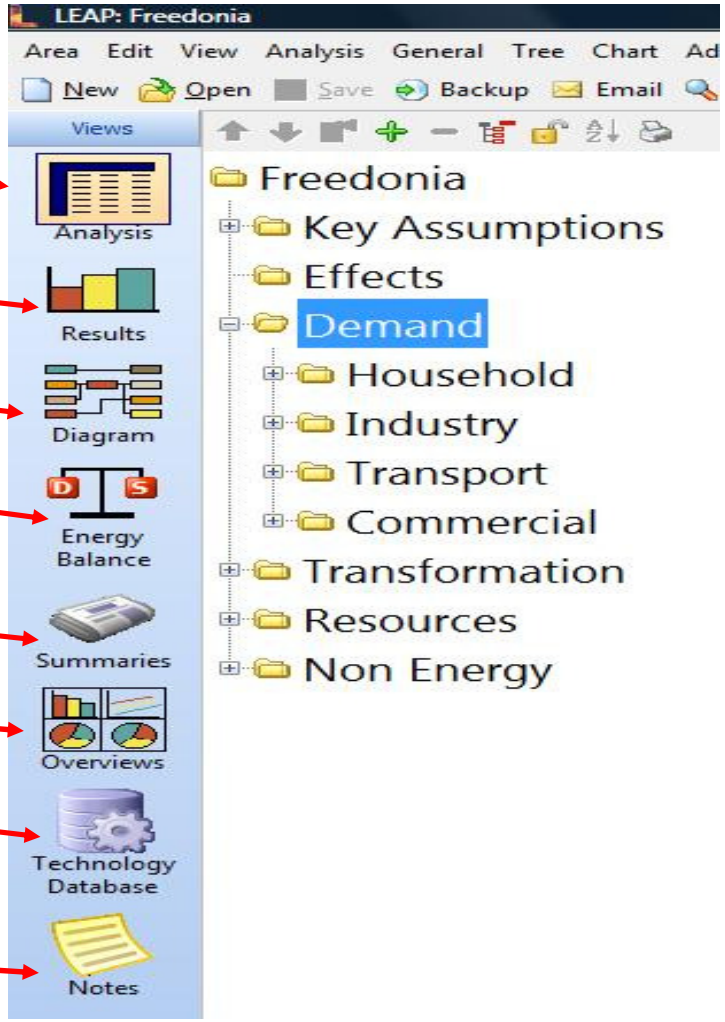
User Interface/View bar

- Analysis
- Results
- Diagram
- Energy Balance
- Summaries
- Overviews
- Technology database
- Notes



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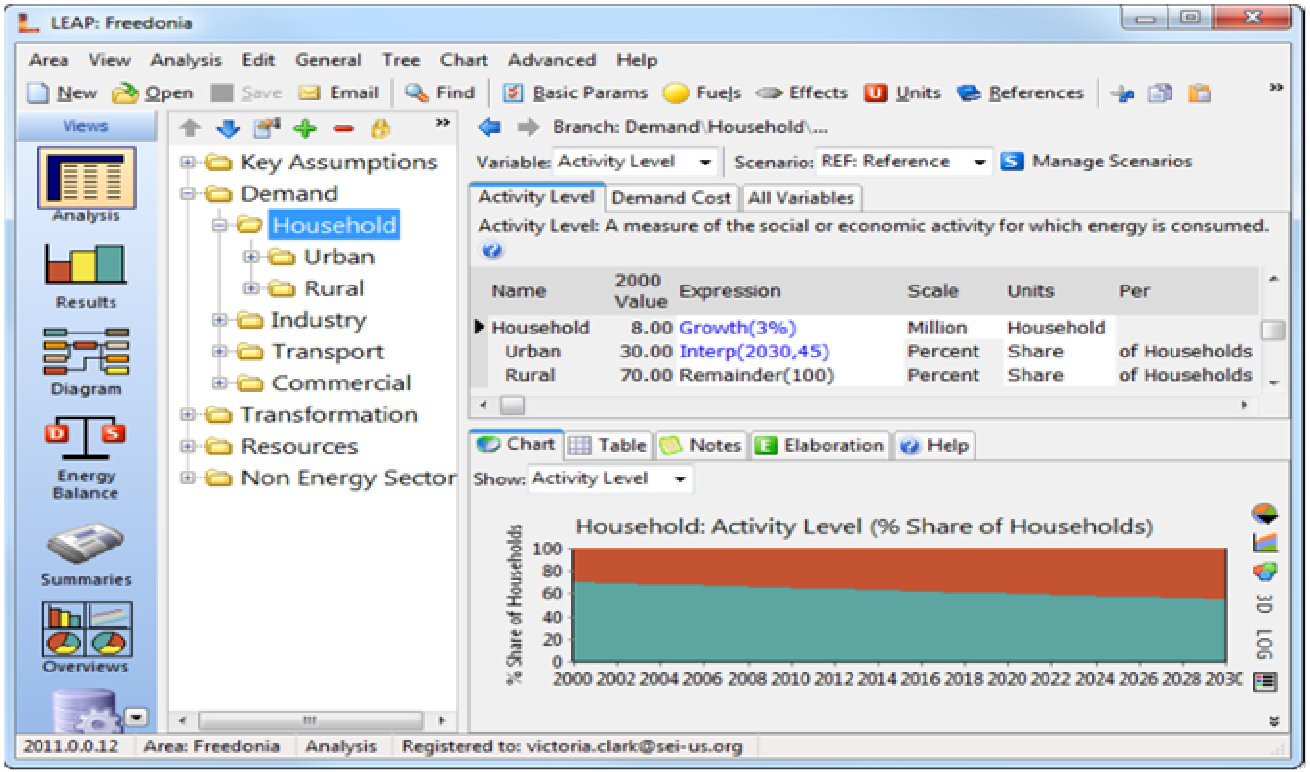
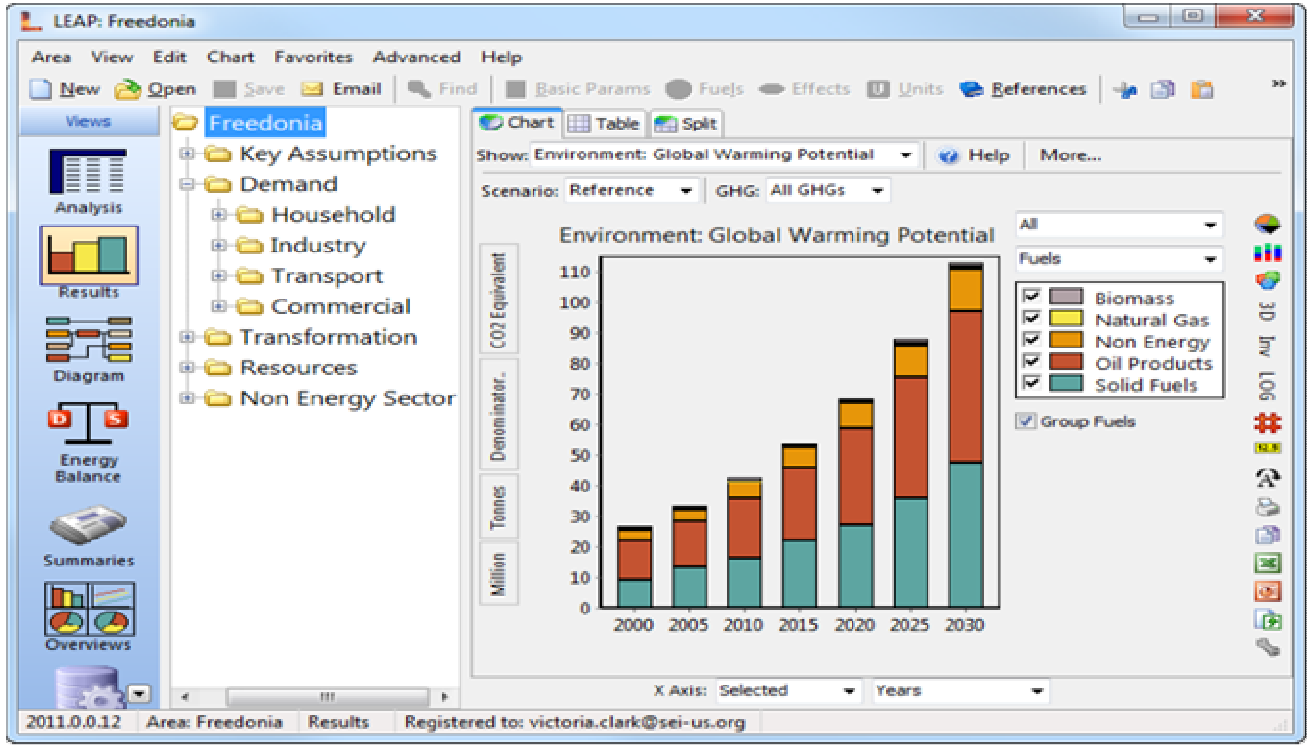
Analysis View



- Creation of tree structures & scenarios
- Import of data for both historical years and forward-looking scenarios

Results View



- Display of detailed or aggregated results as charts, tables or maps
  - Different ways of format: unit of measurement, type of charts, colors, numeric format
- Export to Excel and PowerPoint

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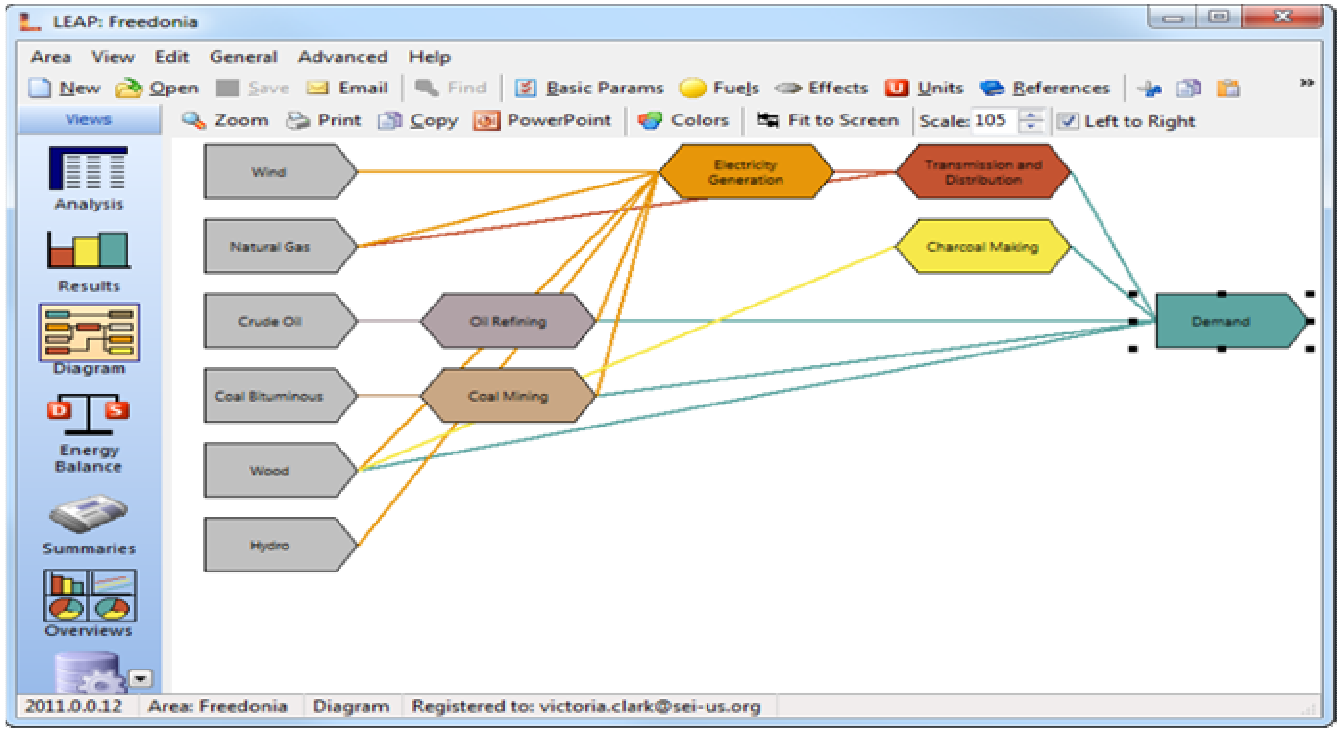
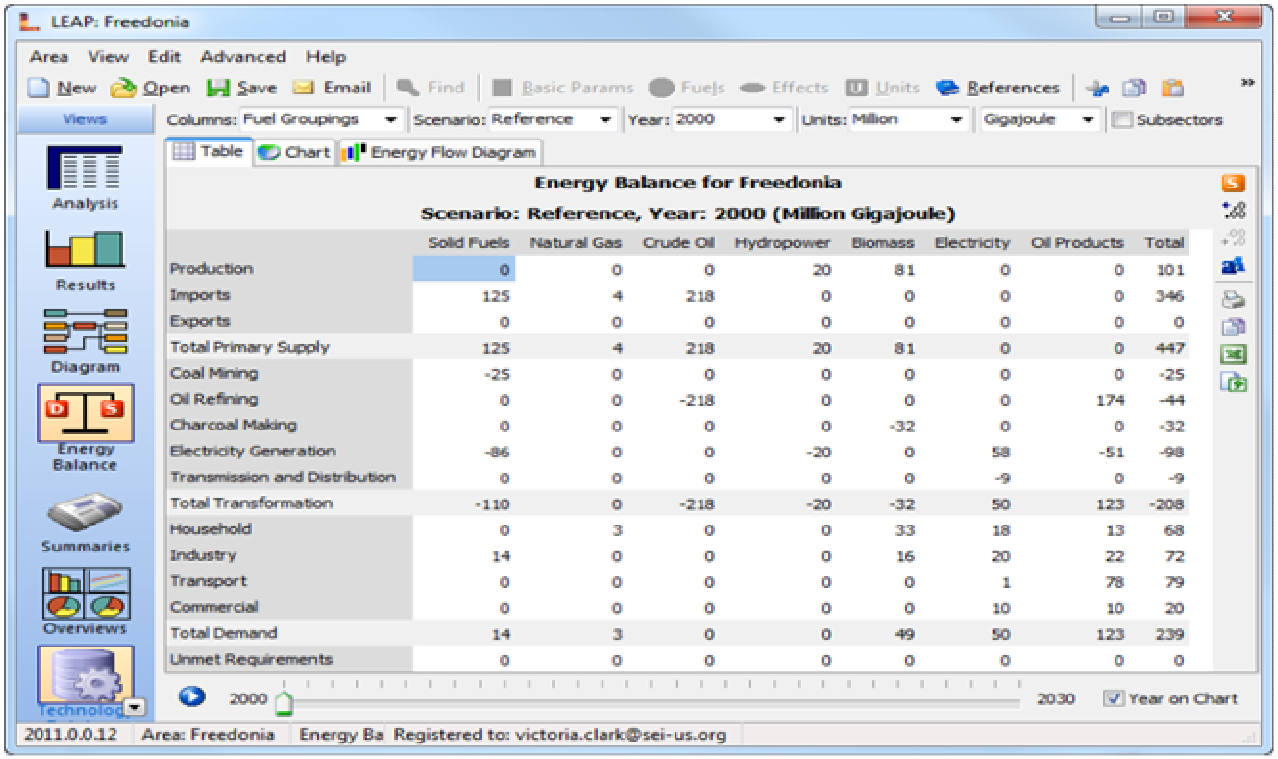
Diagram View



- Display of main energy flows from resource extraction, through the conversion and transport of fuels, to final energy demand
- Zoom in to examine processes and input/output fuels within each module

Energy Balance View



	Solid Fuels	Natural Gas	Crude Oil	Hydropower	Biomass	Electricity	Oil Products	Total
Production	0	0	0	20	81	0	0	101
Imports	125	4	218	0	0	0	0	346
Exports	0	0	0	0	0	0	0	0
Total Primary Supply	125	4	218	20	81	0	0	447
Coal Mining	-25	0	0	0	0	0	0	-25
Oil Refining	0	0	-218	0	0	0	174	-44
Charcoal Making	0	0	0	0	-32	0	0	-32
Electricity Generation	-86	0	0	-20	0	58	-51	-98
Transmission and Distribution	0	0	0	0	0	-9	0	-9
Total Transformation	-110	0	-218	-20	-32	50	123	-208
Household	0	3	0	0	33	18	13	68
Industry	14	0	0	0	16	20	22	72
Transport	0	0	0	0	0	1	78	79
Commercial	0	0	0	0	0	10	10	20
Total Demand	14	3	0	0	49	50	123	239
Unmet Requirements	0	0	0	0	0	0	0	0

- Display in standard format used by IEA and most national energy planning agencies for any scenario and year
  - as table, chart, or flow diagram

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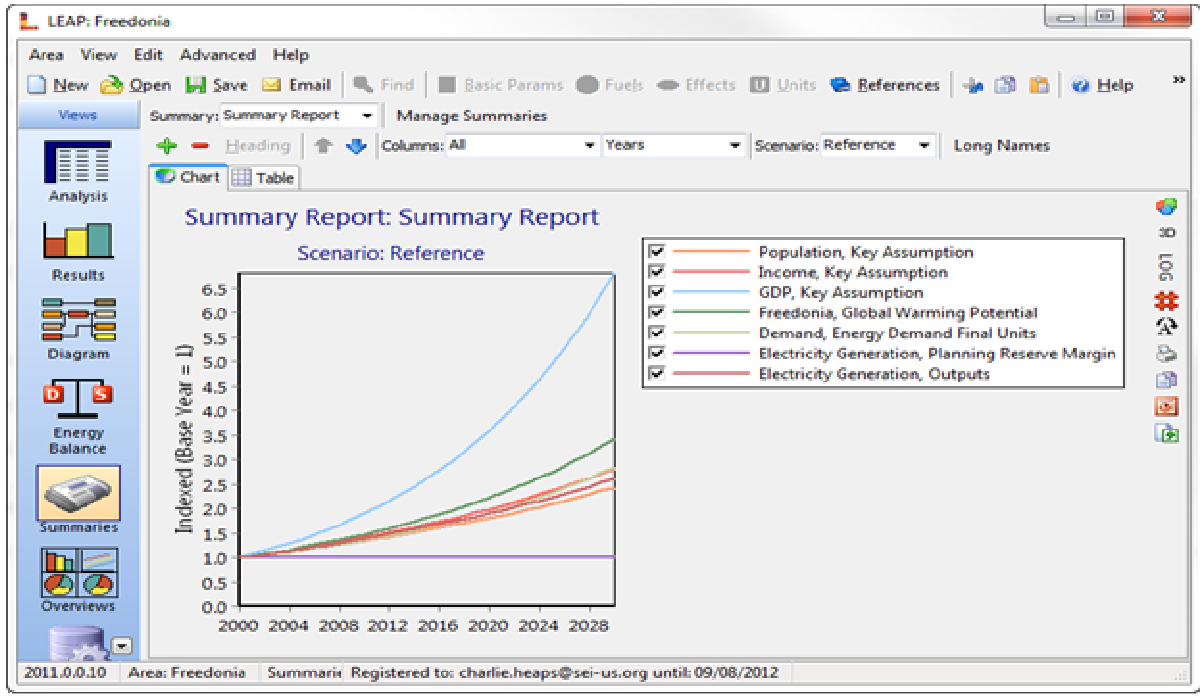
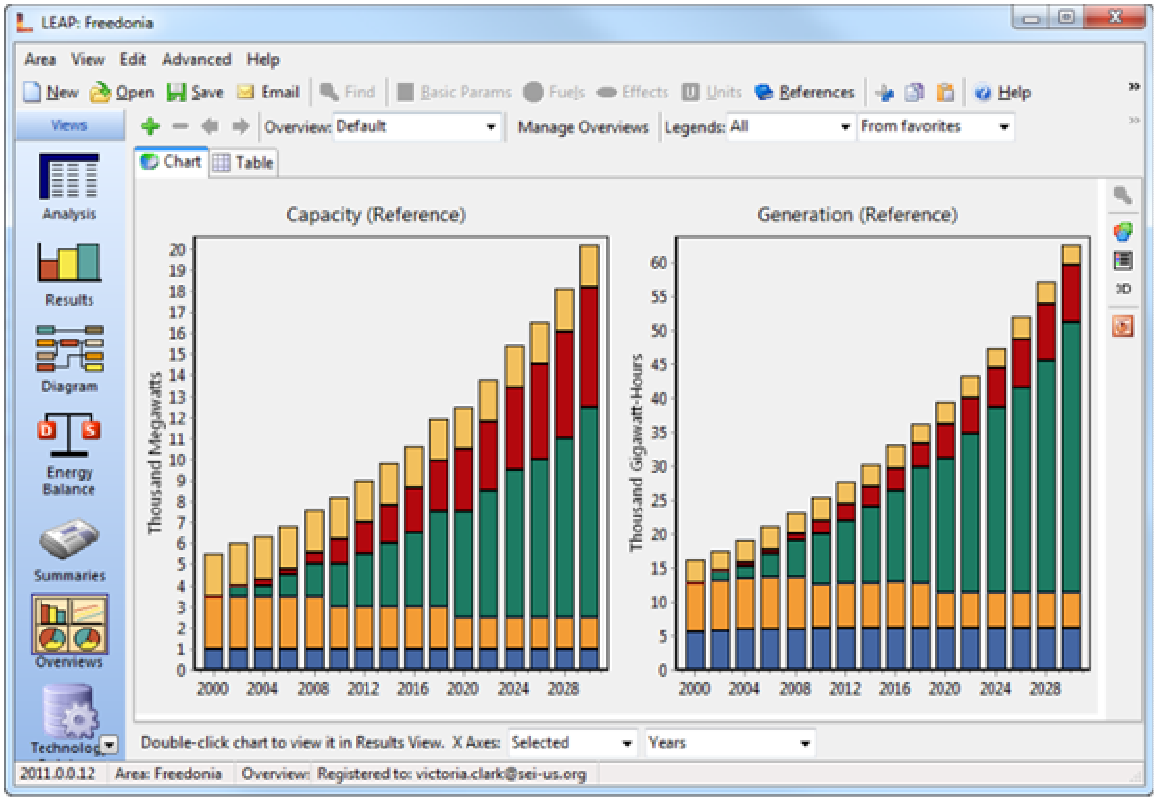
Summaries View



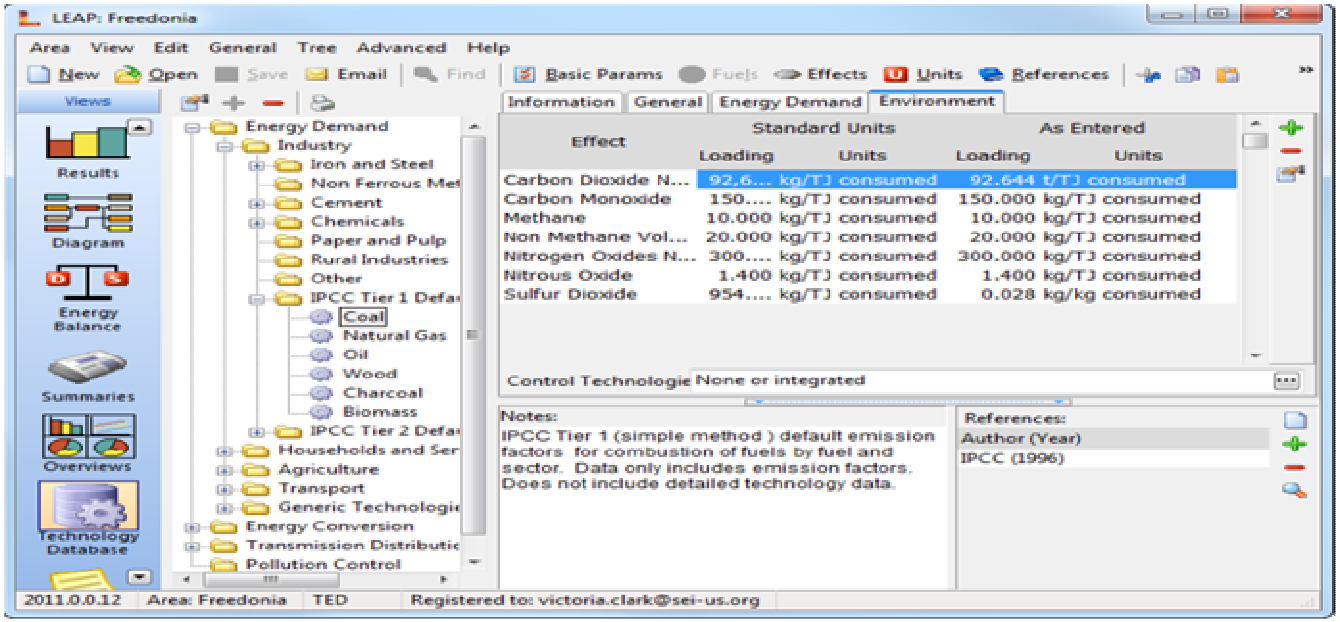
- Customized tabular and graphical reports
- Cost-benefit summary report

Overviews View



- Favorite charts are saved and grouped together

Technology Database



Technology and Environmental Database (TED)

- Information and data on energy technologies
  - Technical characteristics, costs and environmental impacts
  - Qualitative information on availability, appropriateness, cost-effectiveness
- Emission factors

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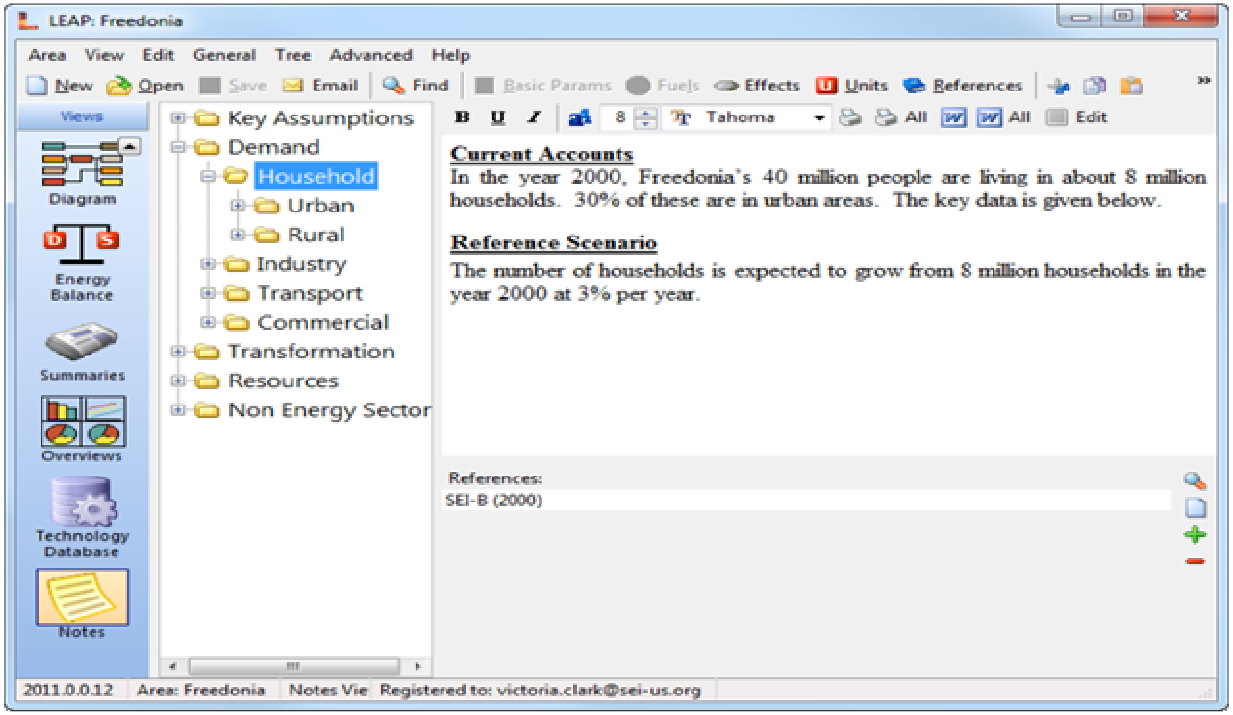
Notes View



- Document of data, assumptions and methods
- Enter notes at each branch of the tree data structure
- Print or export to Microsoft Word for use in reports

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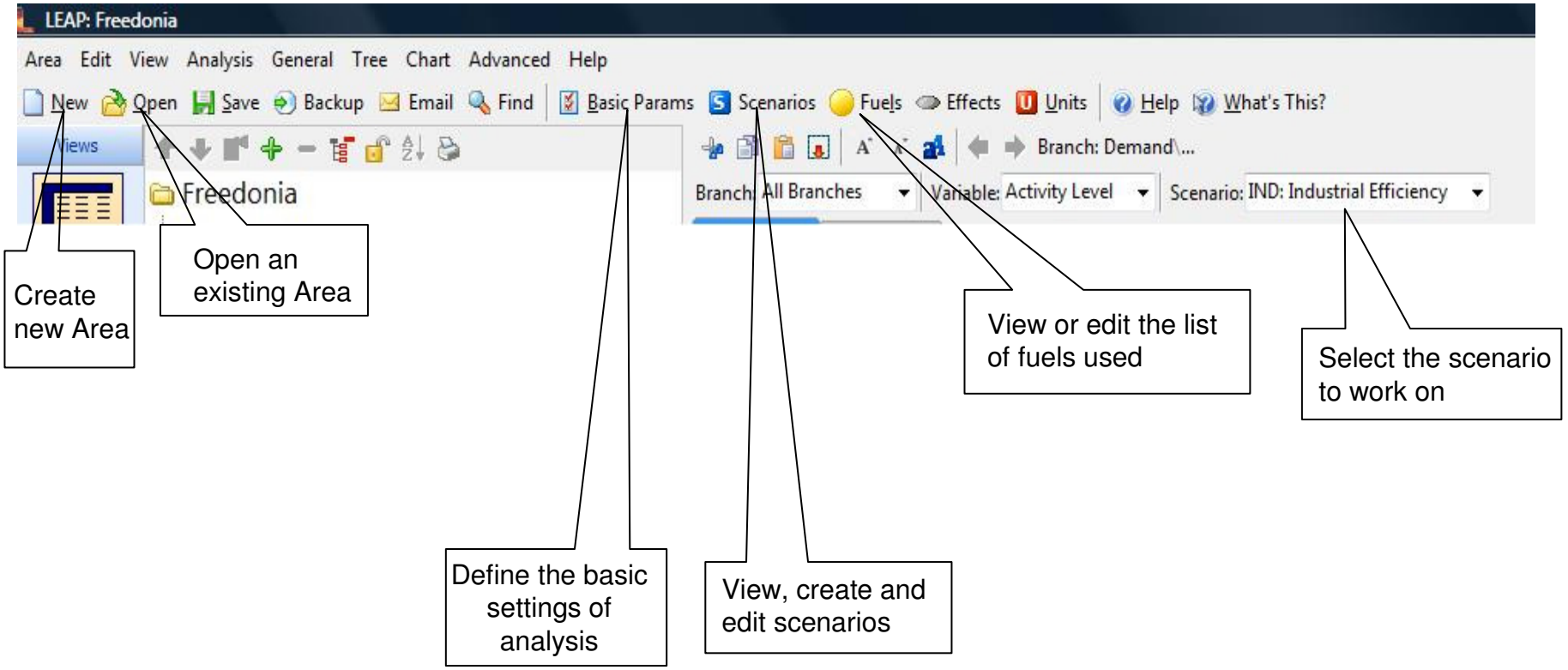
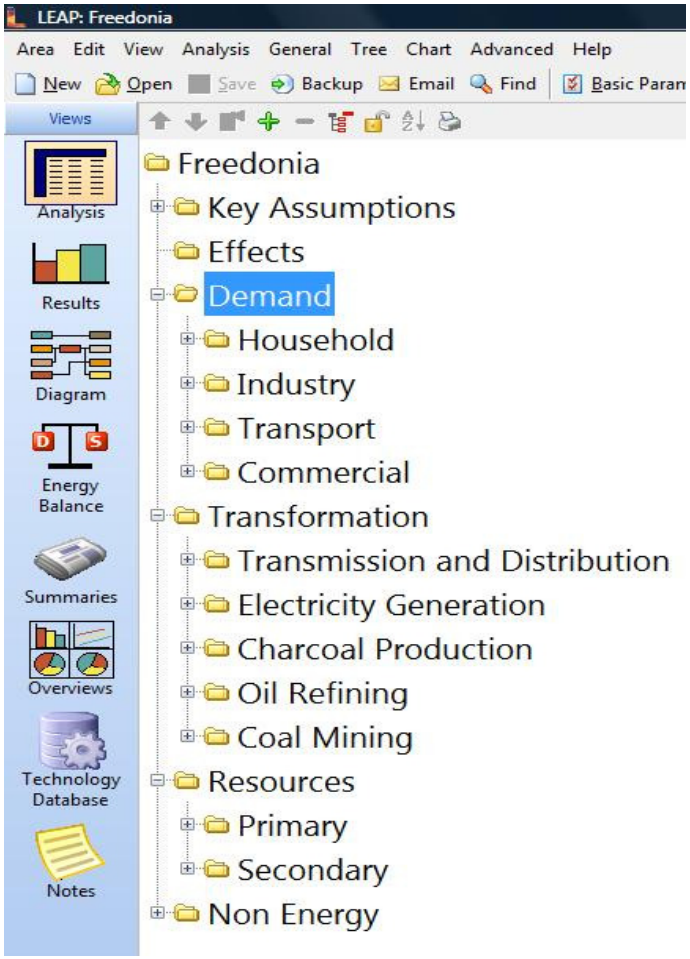
User Interface/main toolbar



User Interface/tree structure



- Representation of energy system
  - 5 major categories
- Main data structure for organizing data/models and reviewing results
- Detailed/end-use oriented, or highly aggregate by sector

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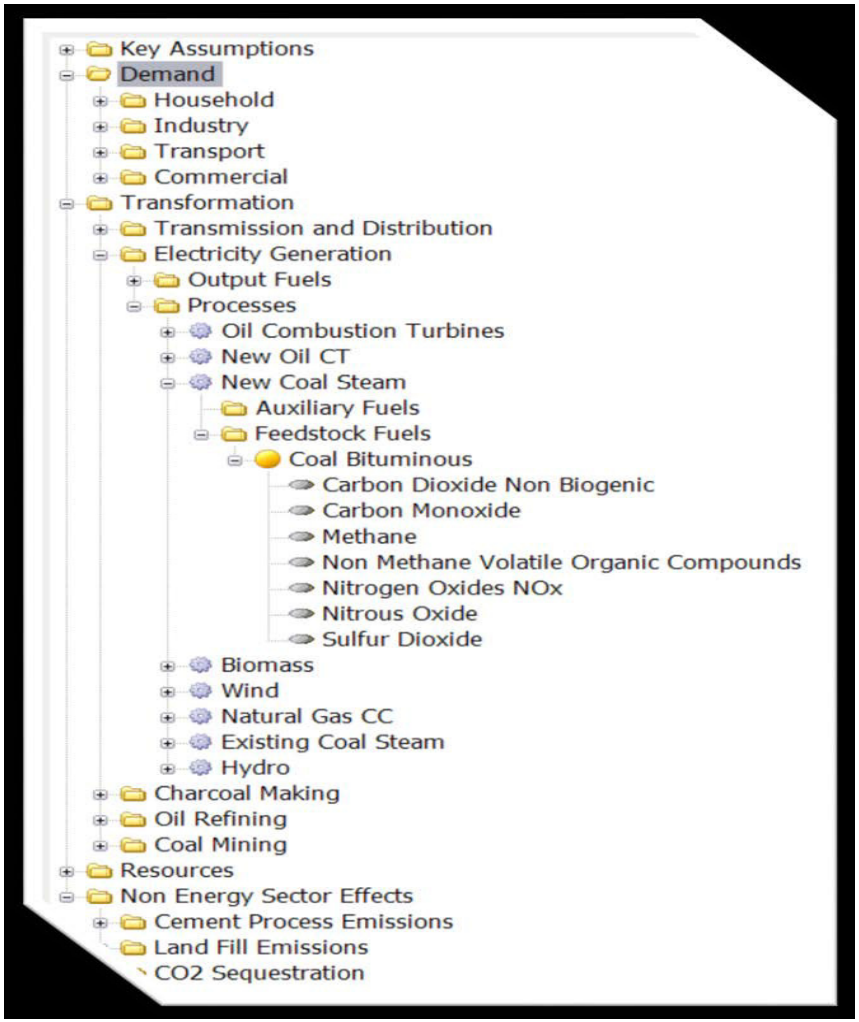
Data requirements

- Demographic
- Economic
- General energy
- Energy demand
  - Activity level
  - Energy intensity
- Transformation
- Environmental
- Fuels



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The main steps for scenario analysis

1. Create an Area
2. Go to Basic parameters
3. Choose the elements of analysis
4. Create the tree
5. Import historical data in Current Accounts
6. Create the scenarios
7. Import the necessary assumptions
8. Push the “Results” button

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Thank you for your attention!

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