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IEA-ETSAP VEDA-TIMES Advanced DEMO Models

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Objective of the project

This project aims to develop **Advanced DEMO Modules** based on the same approach used for the Basic and Intermediate incremental models commissioned by IEA-ETSAP in May 2013.

The advanced DEMO models will cover the most often used TIMES variants and features.

Any suggestion and comment for the selection of the Advanced DEMO models are welcome.

Basic/Intermediate DEMO Models already commissioned

Step Number	Step Name	Step Number	Step Name
1	Supply Curve	9	Reasons for multiple SubRES.
2	Supply curve + simple energy service demand	10	Demand Projection
3	Electricity Generation	11	Using User Defined sets in VEDA FE
4	Electricity sophistication	12	User Constraints
5	Multi-region with multiple B-Y	13	Intermediate modelling techniques
6	Compact multi-region approach	14	Elastic Demand
7	More detail in B-Y	15	Lumpy Investment
8	Split B-Y by sector		

Advanced DEMO Models list

Model	Model Name	Key Features
A1	Advanced features	<ul style="list-style-type: none"> Freezing initial periods to an existing solution Age-based shaping of attributes
A2	Elastic supply	<ul style="list-style-type: none"> Modelling own-price elastic supply
A3	Stochastic	<ul style="list-style-type: none"> Introduction of Stochastic modeling
A4	Multi-OBJ	<ul style="list-style-type: none"> Introduction of multi-component objective function for EMISSIONS Introduction of multi-component objective function for RISK
A5	Trade-off	<ul style="list-style-type: none"> Introduction of the sensitivity analysis approach for EMISSION / RISK trade-off
A6	Technology Learning	<ul style="list-style-type: none"> Endogenous Technology Learning for few new technologies

Deliverables

1. The Advanced DEMO models VEDA templates.
 - For each model step a short introduction will explain when the feature is used, the VEDA-FE template(s) will exemplify how to implement it, the running procedure will be explained.
2. The VEDA-BE tables necessary to analyse the results will be prepared.
3. A short description of the feature and how to use the models will be included.

Relevance to the Annex XII topics

Capacity building - Best practice examples, manuals, online forum and hands-on training opportunities will be offered with the aim of maintaining/improving international/national capabilities for conducting energy systems analyses and the effective use of ETSAP tools.

Expected benefit for ETSAP

Ready reference for advanced modeling features of TIMES will make it easier to be used by new and existing modelers. These are typical topics requested from expert users for intermediate and advanced training courses.

Estimated costs: 17,400 €

Expert	Amit	Gary ¹	Kathleen	Mauri	TOTAL
Number of working days	7	2	5	15	29
Cost	4,200 €	1,200 €	3,000 €	9,000 €	17,400 €

¹Two days of LoE from Gary's ETSAP LO contract will be devoted to these activities

Time schedule: 6 months

THANK YOU!

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