

SEAI National Energy Modelling Framework



Background / Context

- Under the Sustainable Energy Act 2002 (Article 6 (2)(b)), SEAI has the legal function to compile and disseminate projections relating to energy production and use.
- Producing annual projections since 2006 in collaboration with the ESRI and stakeholders

Purpose and outputs of projections

- Purpose
 - Look at the future of energy supply and demand in Ireland
 - Analyse the impact of policies and measures on overall trends
 - Consider gaps to targets
 - Inform policy development in priority areas
 - National and international reporting commitments / requirements
- Inputs
 - Macro-economic, fuel and carbon price, electricity system, sectoral models (including EE and RE)
- Outputs
 - National: DCCAIE (and stakeholders) for policy making impacting energy supply and use
 - International: Energy related emissions - EPA *National Emissions Projections*. EU energy and emissions targets reporting (*NEEAP*, *NREAP*, and others)

Need for a National Energy Modeling Framework (NEMF)

- EU Winter Package ‘*Clean Energy for All Europeans*’ (Nov, 2016)
- Includes new legislative proposal for governance of Energy Union – illustrate pathway for delivery EU energy and climate targets 2030 and beyond
- First National Energy and Climate Plans required (April 2018)
 - 2021 – 2030 (plus 2050 perspective)
 - transparency on national efforts, reduce admin burden
 - regulatory stability for investment certainty
- Content of the plan
 - Current situation
 - Objectives, policies and measures (for energy security, integrated energy market, EE, decarbonisation of supply, research etc.)
 - **Integrated projections and indicators**

National Energy Modelling Framework (NEMF)

- Linking existing modelling tools (projections and sectoral models)
- New framework will allow:
 - Development of Annual Energy Projections (2030, beyond)
 - Preparation of energy inputs to NECP and NMP
 - Assessment of costs and impacts of policies and measures (to 2030 and beyond)
 - Assessment of level of RE penetration (%) for a range of scenarios and ‘levels of effort’



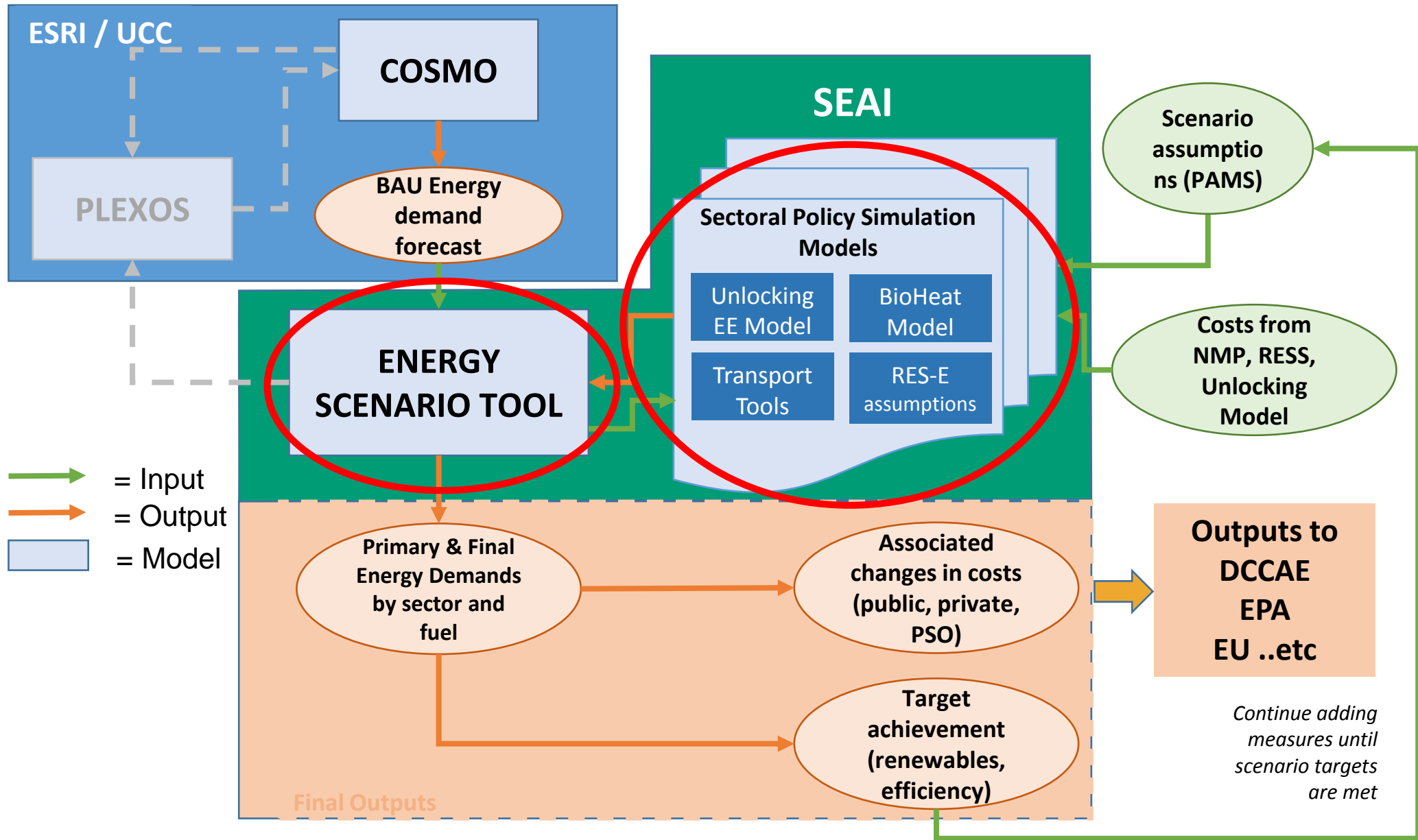
https://www.seai.ie/resources/publications/Irelands_Energy_Projections.pdf

Sectoral Policy Simulation Models

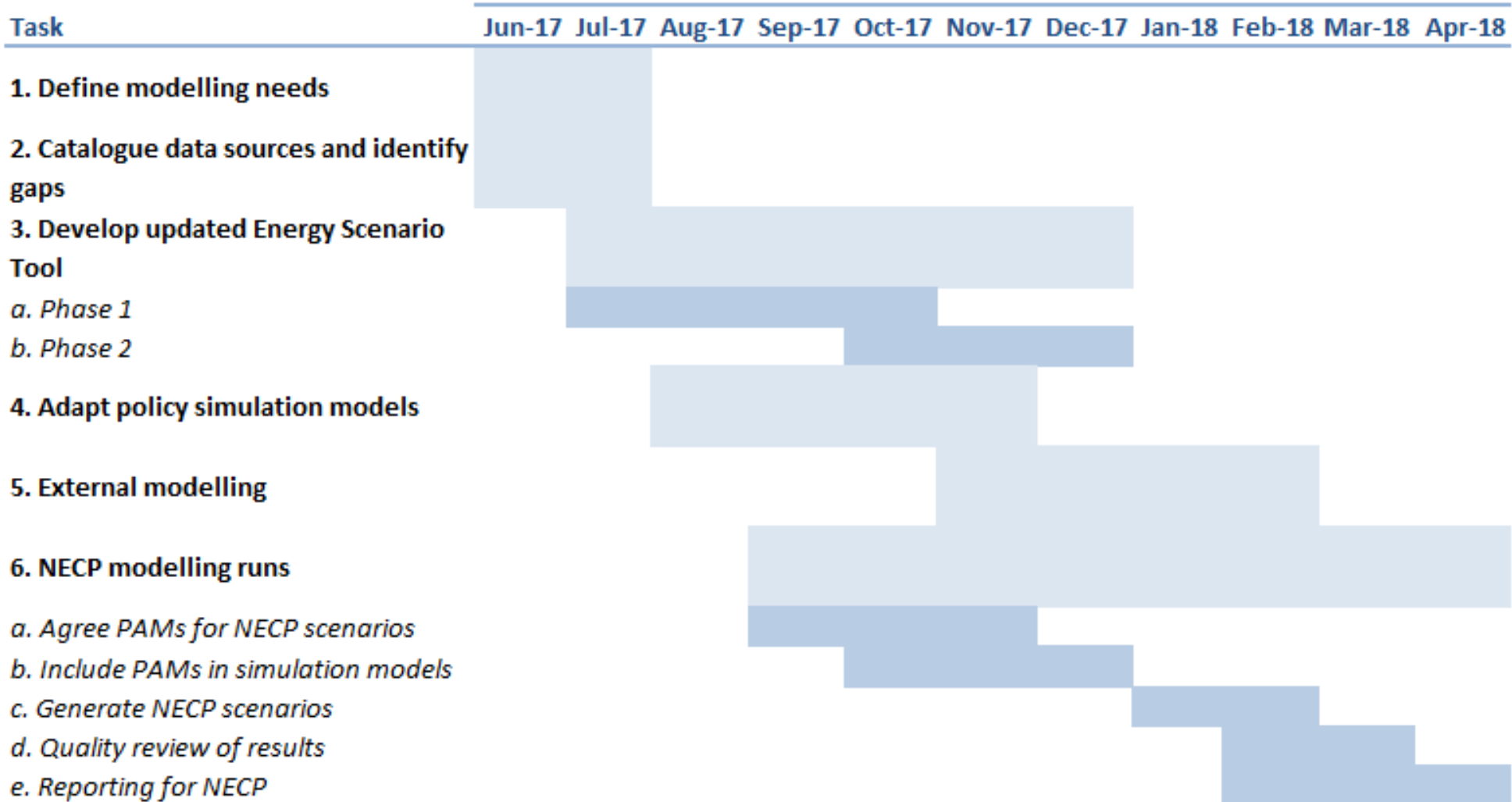
- Update and Integration of existing policy simulation models / analytical tools
- Models have been applied in several existing publications:
 - NMP
 - Unlocking Energy Efficiency Opportunity
 - NEEAPs
 - BioHeat Model – RHI analysis
 - 2030 Buildings Study (EE + RE interaction)



National Energy Modeling Framework (NEMF)



Project Timeline for NECP Development



Principles and Outcomes

Principles of model development

- Combining existing models – consistent assumptions
- Robust and quality models (verified)
 - acceptability of results by key decision makers and Commission
- Leverage what we know about policy delivery – incorporating what works
- Ongoing – improvements and refinement of EE policy and measure estimates

Outcomes

- Fulfil required input to NECP, advising DCCAE, informing decision makers in a single plan encompassing climate and energy
- Baseline (existing situation) – and policy effort scenario/s
- Modelling framework that is flexible and responsive to key policy questions / propositions / trade-offs

