

Exploring the influence of knowledge created with LEAP model in Strategic Environmental Assessment of Estonian energy policy

Piret Kuldna, Kaja Peterson, Reeli Kuhi-Thalfeldt*
Stockholm Environment Institute Tallinn Centre, *Tallinn
University of Technology

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Introduction

- Strategic Environmental Assessment (SEA) as means of sustainability (environmental) evaluation
- Contents of the presentation:
 - Context
 - Knowledge brokerage
 - Example of SEA and quantitative modelling in energy sector
 - Methodology
 - Findings and conclusions

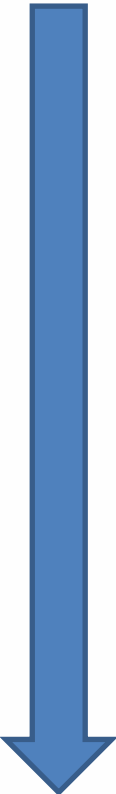
Use of models in Impact Assessments

- **Impact assessments, incl. SEA:**
 - to get additional information on the issue
 - to engage stakeholders
- **Models, projections:**
 - for setting environmental / economic, etc. requirements
 - for communication and visualisation of “hard facts”
- **Research question:**

How are quantitative model(s) for SEA selected by policy developers and how is the knowledge on modelling communicated?
- **Knowledge brokerage:**
 - interactive process between the producers and users of knowledge, so that they can co-produce feasible and research-informed policy options (van Kammen et al. 2006)

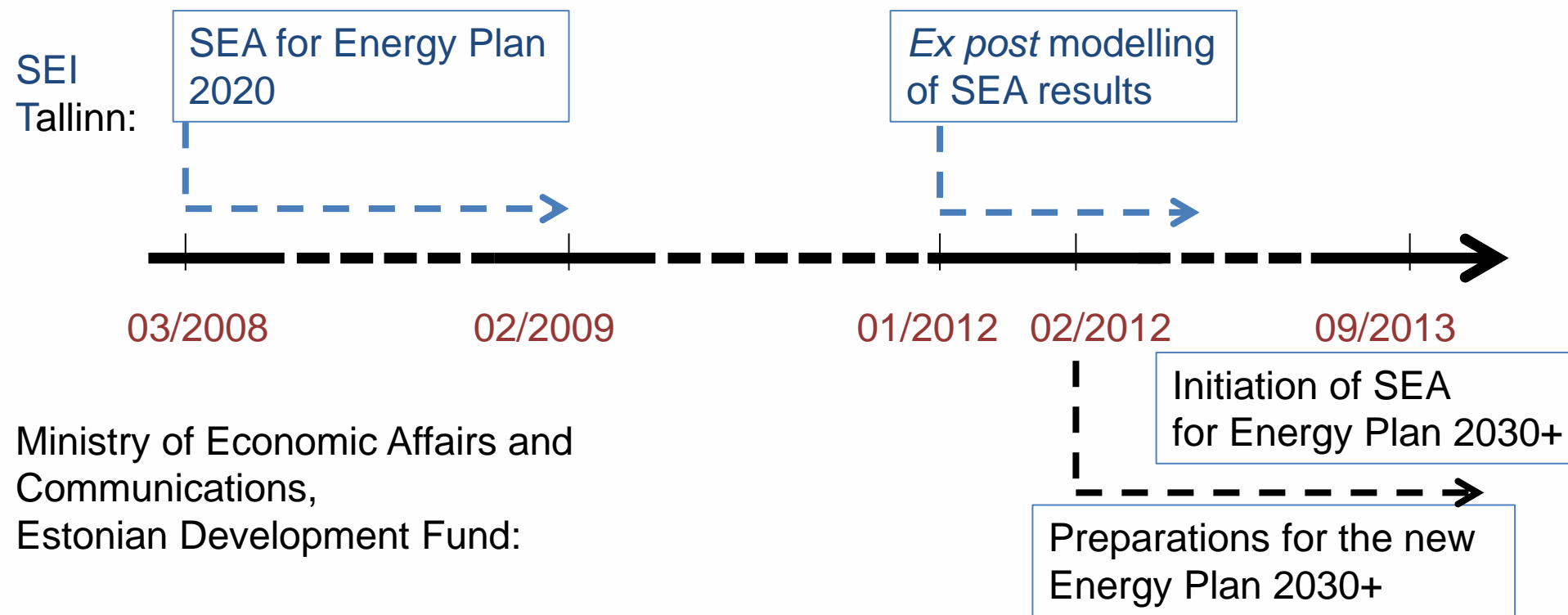
Knowledge brokerage strategies

KB strategies (Michaels, 2009):



<i>informing</i>	disseminating research results to policy-makers
<i>consulting</i>	advising on a problem delineated by party seeking counsel
<i>matchmaking</i>	bringing together individuals who can contribute to policy-making and who would not otherwise meet
<i>engaging</i>	involving other parties into discussion which is framed by one party
<i>collaborating</i>	parties jointly frame interaction and discussion of a problem
<i>capacity building</i>	parties jointly frame interaction and discussion of a problem with multiple dimensions + learning

Timeline and methodology



Methods:

Data collection from documents and notes, workshop with policy developers, observations at the meetings of the Energy Plan 2030

Use of LEAP in national energy plans

- **Policy question in SEA of national energy plan 2020:**
 - Which electricity production scenario and heat production scenario has the lowest environmental impact?
- ***Ex ante* modelling question:**
 - What will be the future CO₂ and SO₂ emissions of the electricity and heat production scenarios?
- ***Ex post* modelling:**
 - Opportunity for policy learning: workshop with policy developers
 - To what extent had the LEAP model results for the Energy Plan 2020 realised?

Ex post modelling results

- **Actual realisation of emissions:**

- In the period 2000-2006: actual CO₂ on average 1.5% higher and SO₂ on average 2.0% higher than modelled in 2009, due to the revised statistical methodology;
- In the period 2007-2010: actual emissions varied much more than model projections, due to different outputs of power plants in these years.

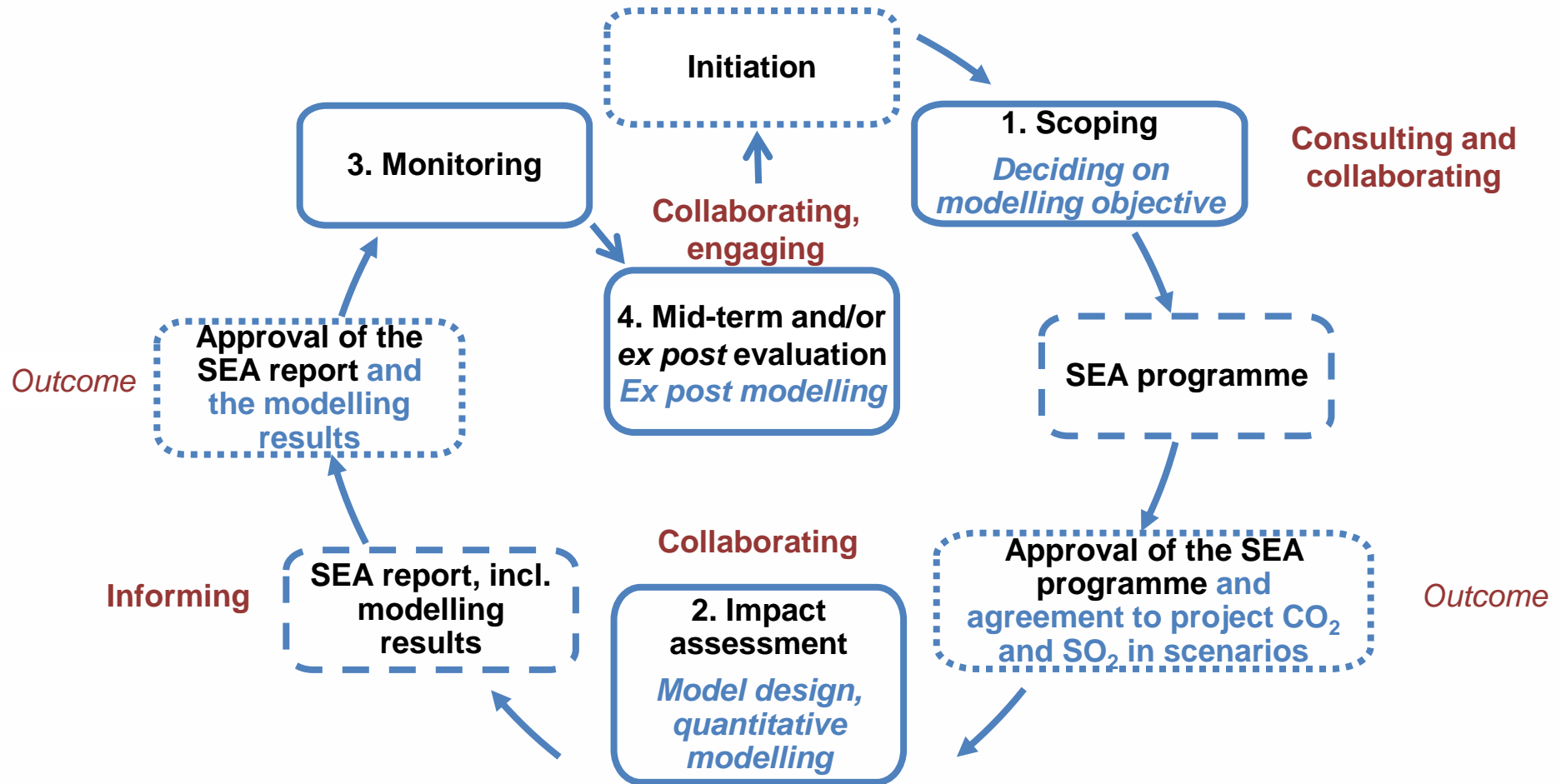
- **Projections:**

- By 2030: *ex post* model projections were higher than modelled in 2009, due to larger growth in electricity consumption than assumed and large-scale electricity export.

- **Causes of differences:**

- Changes in statistics and consumption patterns;
- Changes in energy production and market;
- Changes in political arena

Use of knowledge brokerage strategies in modelling



Factors enhancing the tool use in SEA of a national energy plan

- **Policy context:**
 - energy policy – overarching, cross-sectoral policy
 - legal requirement for SEA of sectoral development plans
- **Timing of knowledge brokerage:**
 - active role of researchers in communication with policy developers from the start of the policy planning (e.g. face to face meetings)
- **Availability of data, experts and resources**

Main findings and messages

- Selection of a model for SEA:
 - Minor role: previous SEA
 - Major role: model capabilities to meet the needs and purposes of the new plan, available expertise, available time and budget
 - Flexible decision
- SEA procedure enables step-wise process of science-policy interaction. E.g:
 - Programme of a SEA → an action plan for knowledge exchange;
 - SEA report → a framework for documenting the tool use process;
 - *ex post* modelling → cyclic SEA and systematic knowledge exchange between researchers and policy developers.

Thank you!



Linking Impact Assessment Instruments with Sustainability Expertise



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