

Renewable Heating Policy Scenarios for Selected Member States

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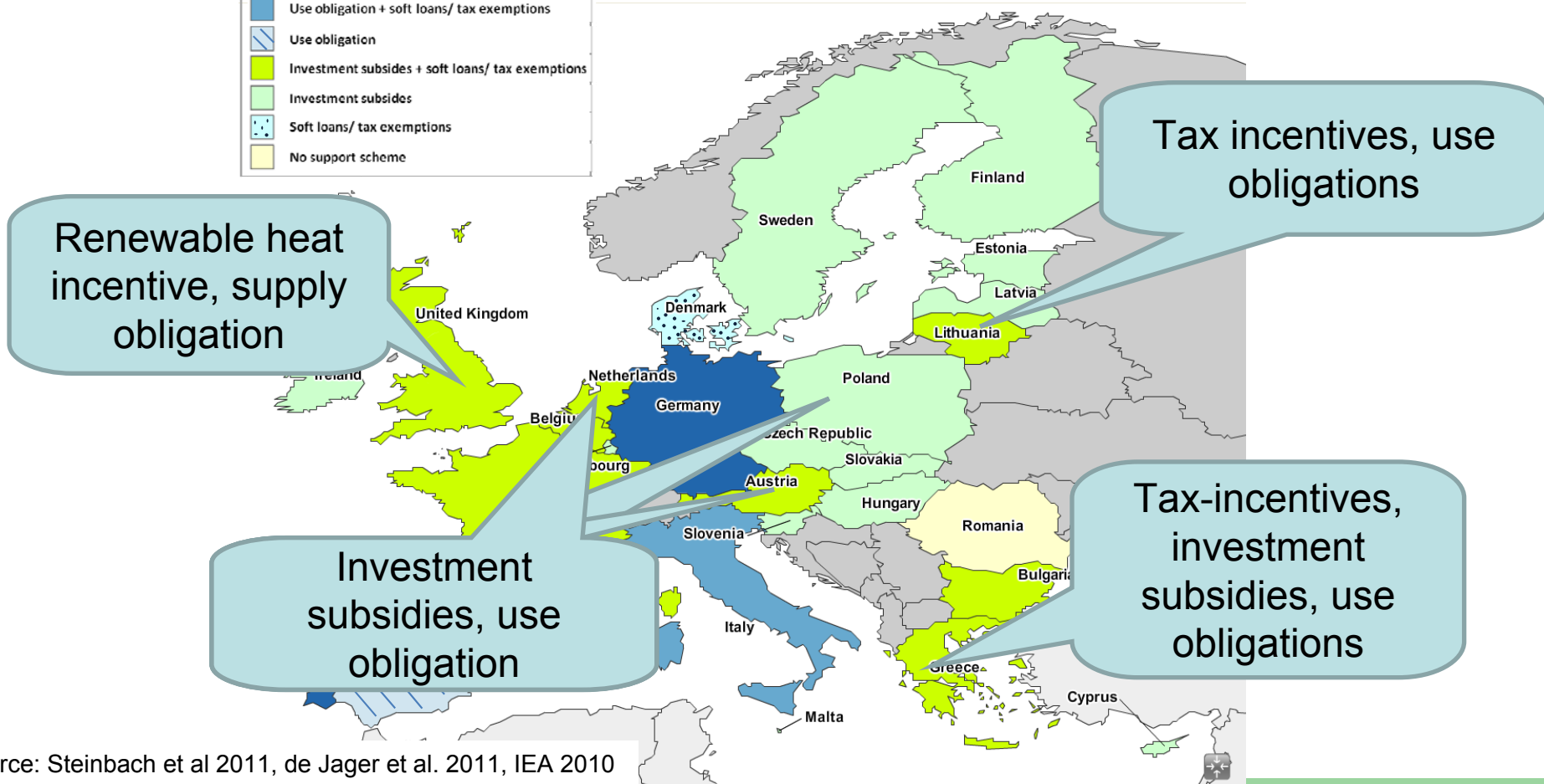
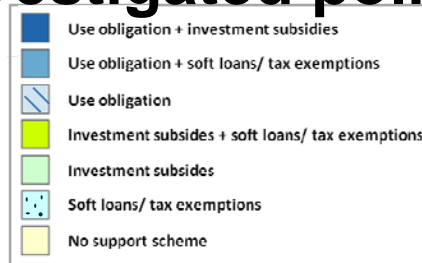
Objective:

Determine the effectiveness and economic efficiency of the selected support options for RES-Heat in different member states.

Tasks carried out:

- **Selection of two relevant policy instruments for each selected member state based on the qualitative analysis and stakeholder consultations**
- **Quantitative analysis for two policy instruments and two energy price scenarios based on the model Invert/EE-Lab**
- **Assessment of the scenarios in terms of:**
 - RES-H generation
 - GHG-reduction
 - Avoided fuel costs
 - Programme costs for supporting RES-H systems
 - Transaction costs
 - Employment effects

Overview of RES-H support schemes (and investigated policies in the RES-H Policy project)

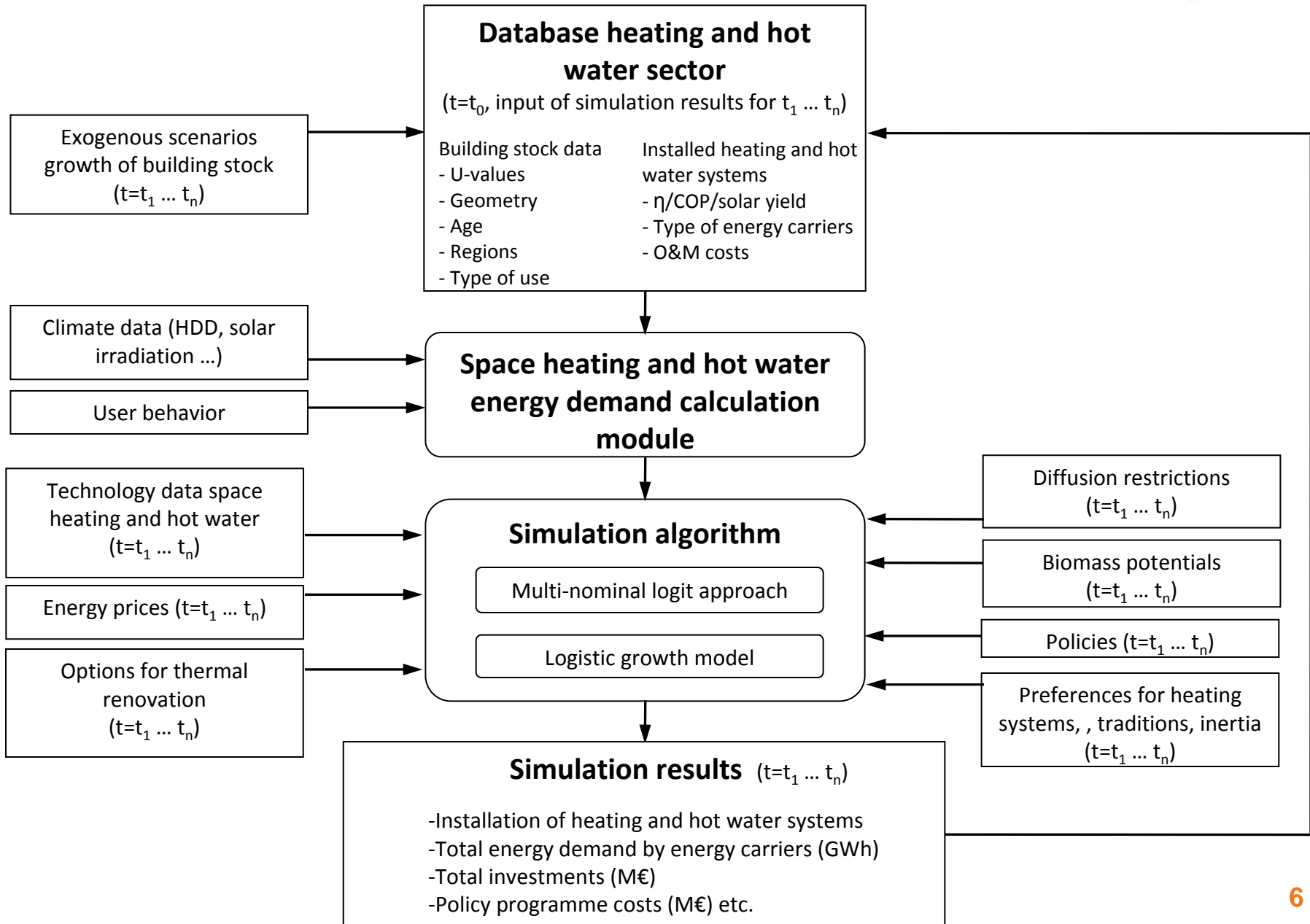


Source: Steinbach et al 2011, de Jager et al. 2011, IEA 2010

Modelling the impact of RES-H policies in the the space heating and hot water sector:

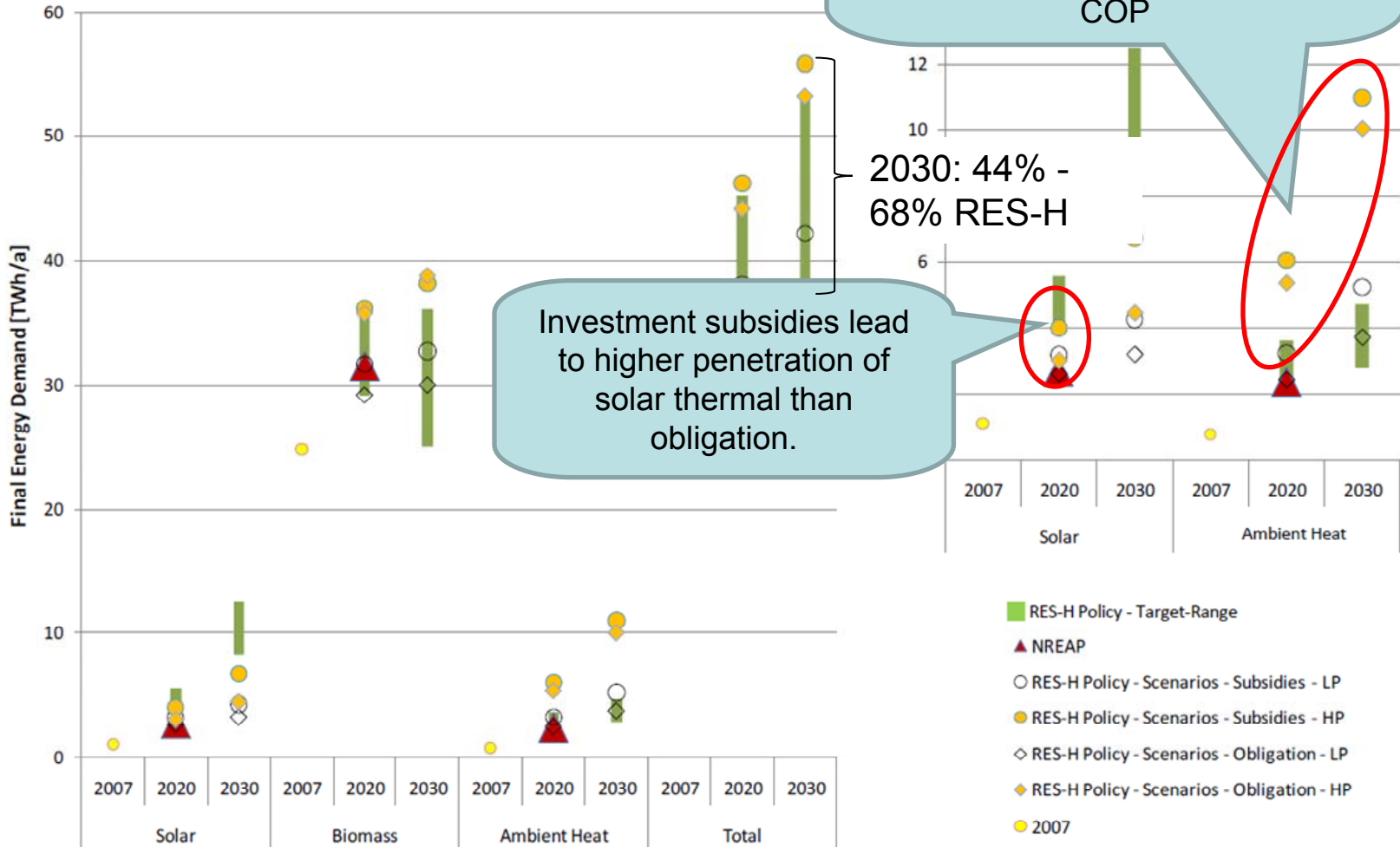
INVERT/EE-Lab

The **INVERT** model

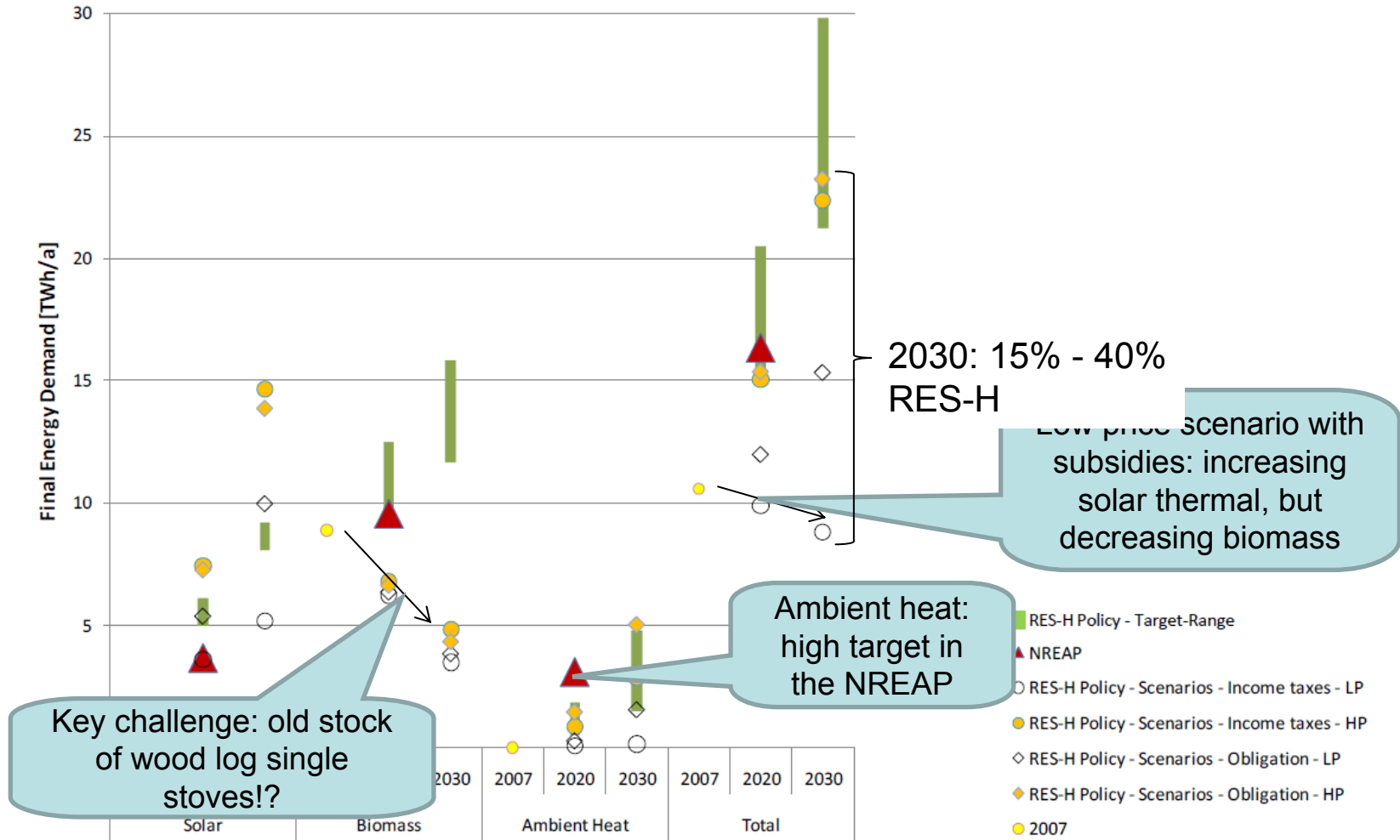


Selected results (AT, GR, LT, UK)

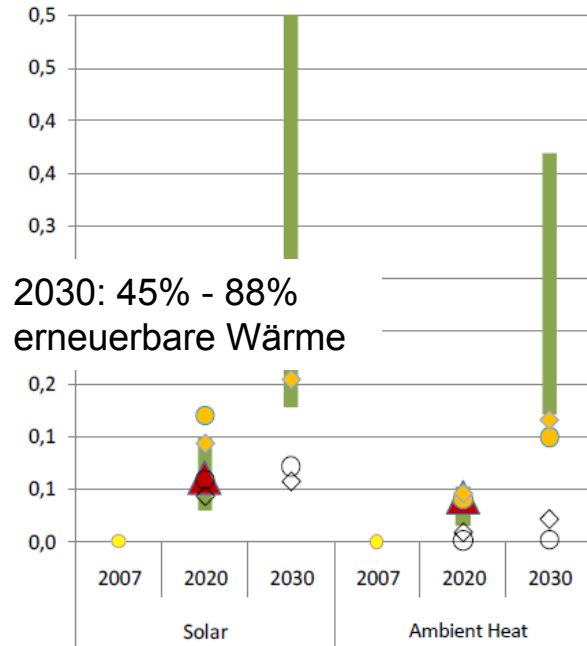
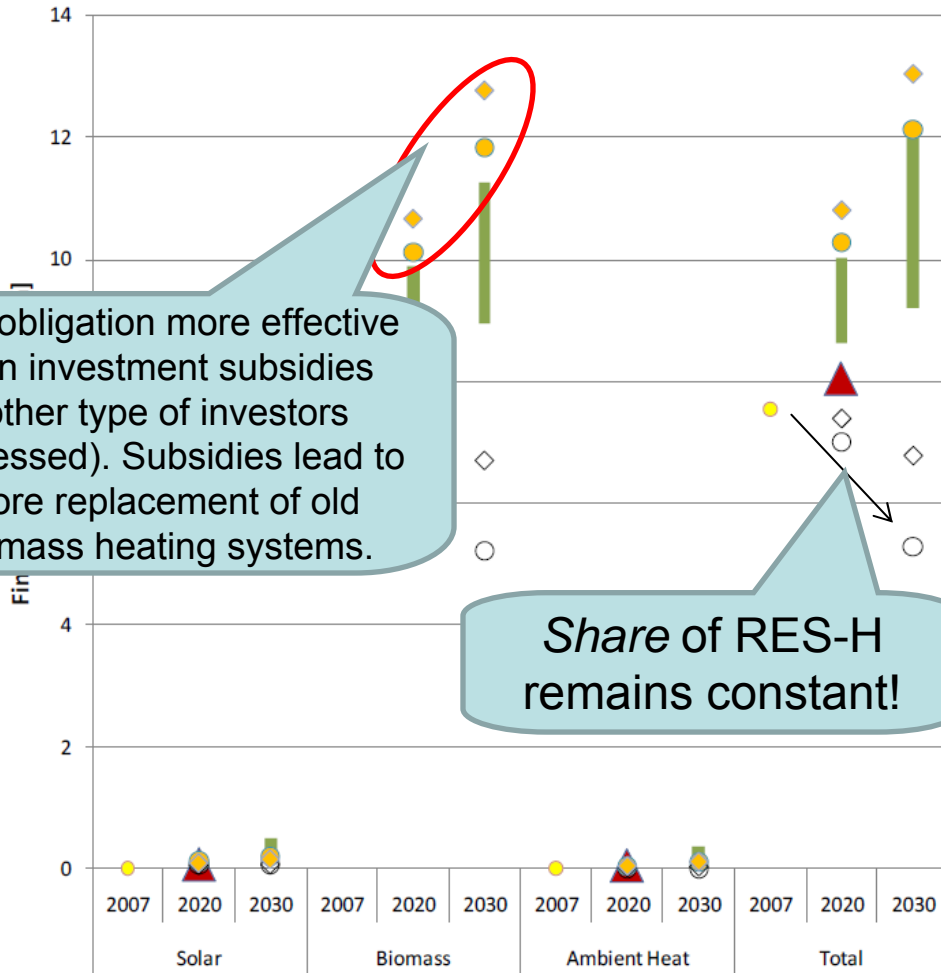
Results AUSTRIA



Results GREECE

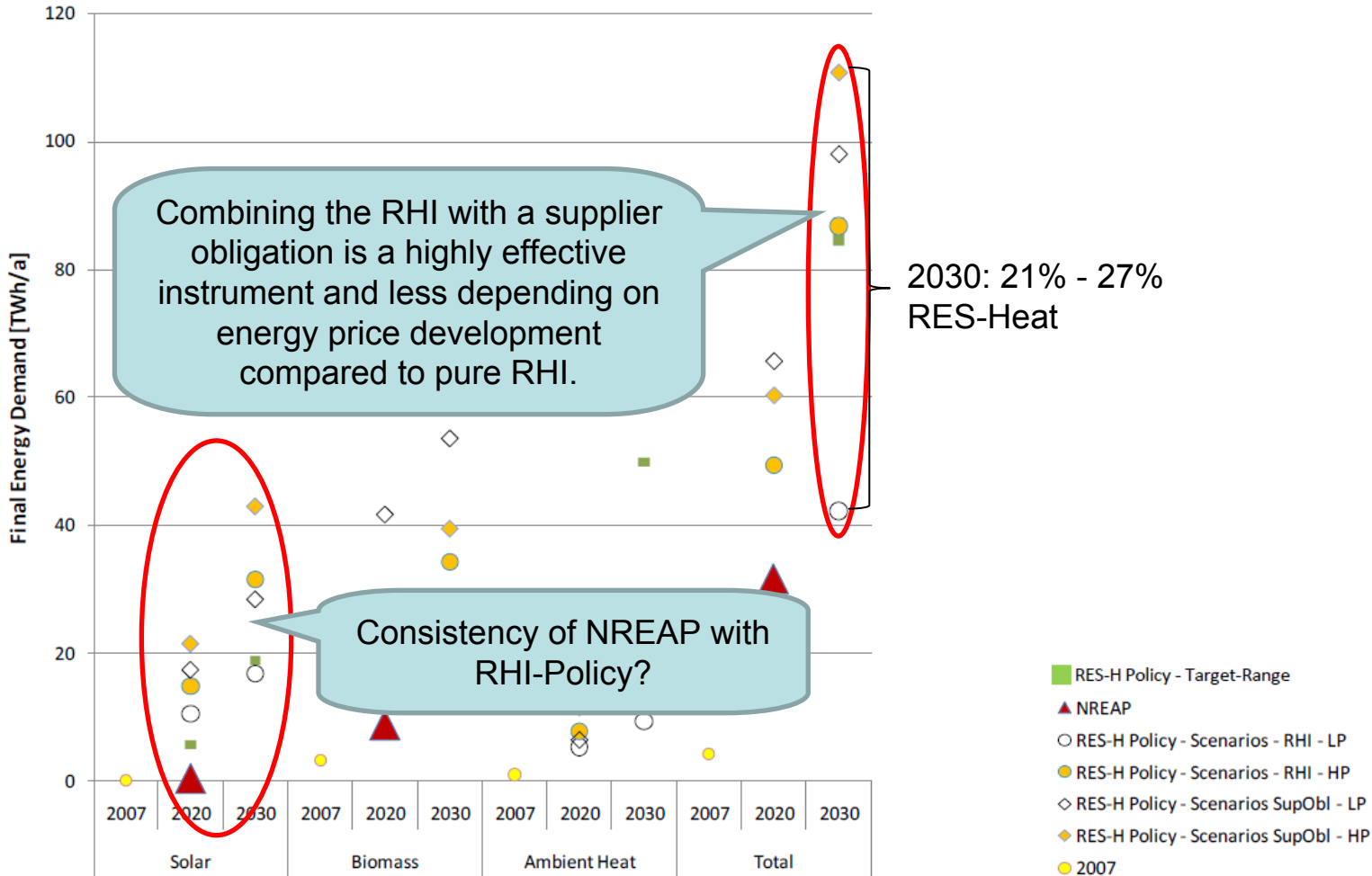


Results LITHUANIA



- RES-H Policy - Target-Range
- ▲ NREAP
- RES-H Policy - Scenarios - Subsidies - LP
- RES-H Policy - Scenarios - Subsidies - HP
- ◇ RES-H Policy - Scenarios - Obligation - LP
- ◆ RES-H Policy - Scenarios - Obligation - HP
- 2007

Results UK



Highlights of other results

- **Avoided fuel costs:**
 - Low energy price scenarios: low (for some countries even negative impact)
 - High energy price scenarios: avoided fuel costs increase up to 25% to > 60% of fossil fuel reference costs in the year 2030
- **Programme costs:**
 - Combining economic incentives with RES-H obligations significantly can reduce the programme costs
 - Transaction costs for programme management are in the range of 0.1%-0.5% and depend on possible synergies, formal requirements etc.

Technology specific summary

Biomass:

- challenges of a large stock of old, partly outdated systems
- ⇒ increasing efficiency and market share with decreasing biomass input?!

Heat pumps:

- significant part of heat pumps in high-temperature heating systems with corresponding low COP
- ⇒ Standards and monitoring of required COPs?
Consistency with respect to high growth of heat pumps according to NREAPs?

Solar thermal:

- Climate conditions
- Increasing share of solar space heating by low-temperature heating systems?

Open questions ...

- **Thermal renovation and low-temperature heating systems are a precondition for high RES-H/C market share!**
- ⇒ **How can and should policies be designed in order to address this interaction of thermal renovation and renewable heating/cooling in the European building stock in the light of the EPBD and the RED?**

Further information:

www.res-h-policy.eu

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