

# 2nd Webinar Series on National Experience in Long-Term Energy Scenario Use and Development

23 November – 07 December 2021 | Virtual



## Scenario modelling to support LTES in Italy

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23rd November 2021

# RSE - RICERCA sul SISTEMA ENERGETICO



## MISSION

Research on the energy system with special focus on publicly funded strategic national and international programs.



## LEGAL STATUS

Publicly controlled research company: part of **GSE Group** (shareholders MEF)



## PEOPLE

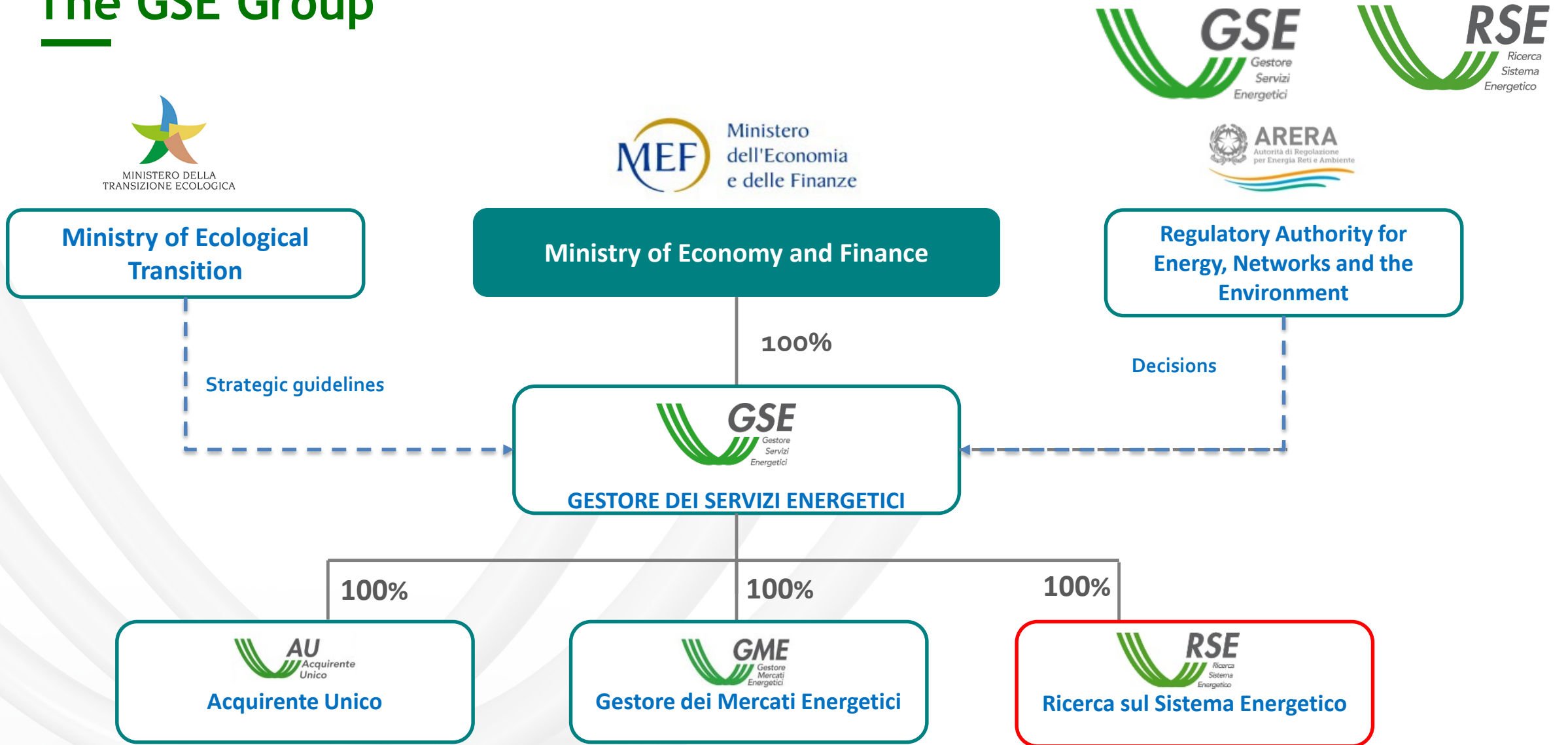
320 employees  
2/3 graduates, 80% researchers



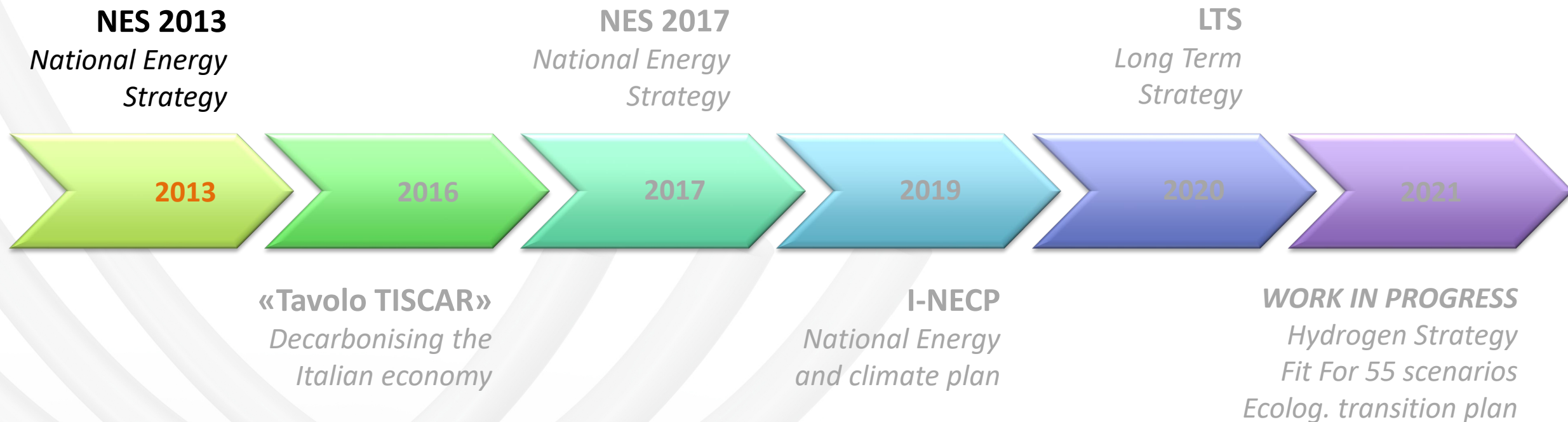
## ACTIVITIES

Basic research on the energy system  
Models and scenarios for national strategies  
Support for regulation / standardization  
Technology transfer  
Industry support  
International representation


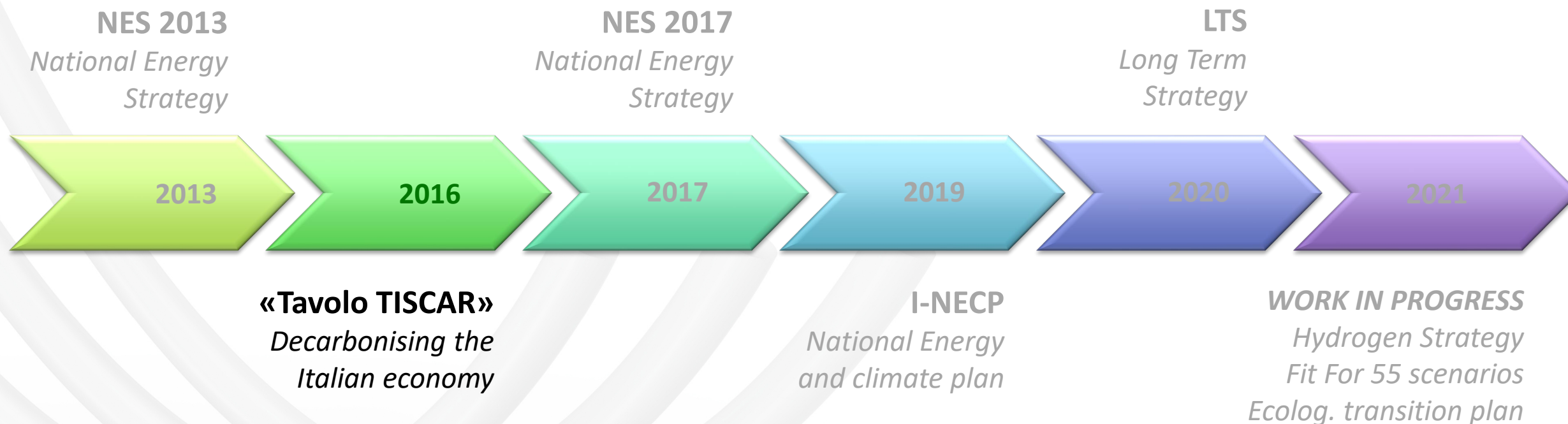
# The GSE Group



# Development of Governamental scenarios


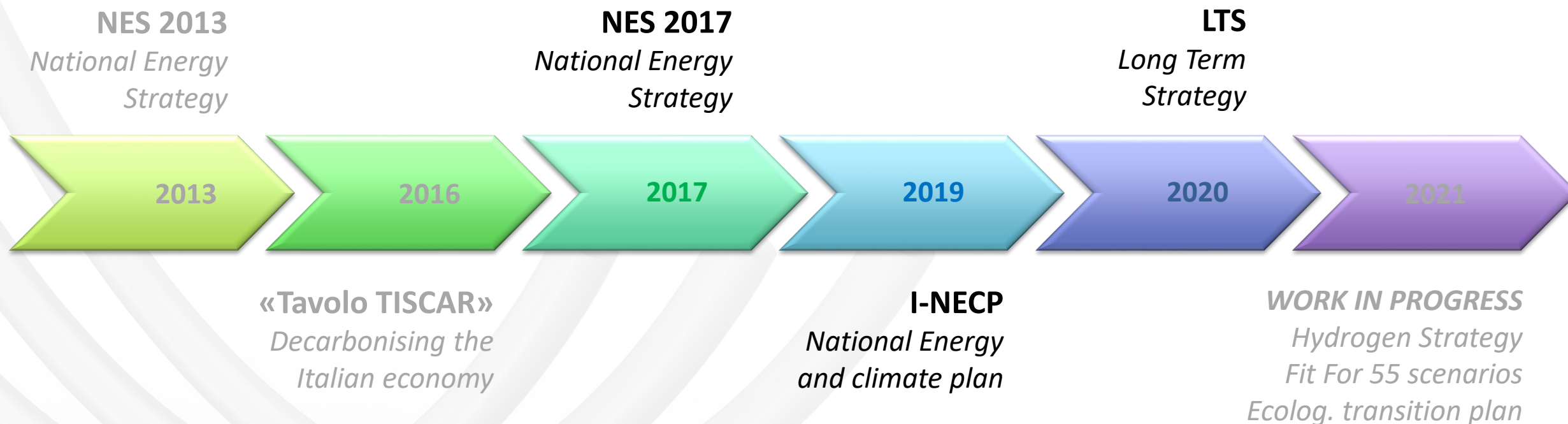


# Development of Governamental scenarios




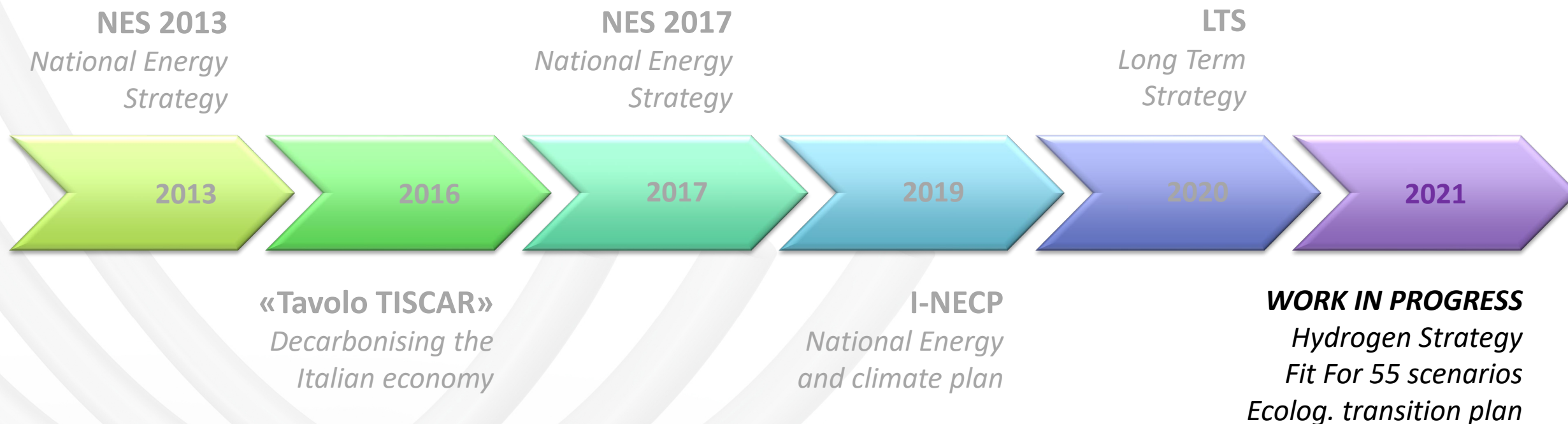
**Energy scenarios**  
**Power system impacts**

# Development of Governamental scenarios



**Energy scenarios**  
**Power system impacts**

# Development of Governamental scenarios



**Energy scenarios**  
**Power system impacts**

# Approach and Co-ordination among LTES entities



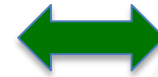
	Coordination	Ministries involved	Scenario Working Group	Impacts	Year target	Negotiation Support	Decarbonation Target
<b>NES 2013</b>	Ministry of Economic Development	MISE	ENEA	Energy	2020	IT economy	-21% GHG
<b>«Tavolo Tiscar»</b>	The Presidency of the Council of Ministers	MISE, MATTM, MIPAF, MEF	70 experts	Economy	2050	EU framework	reference scenario
<b>NES 2017</b>	Ministry of Economic Development	MATTM	RSE, ENEA, ISPRA, GSE	Energy, Emission	2030	IT economy	-57% ETS, -33% ESD
<b>I-NECP</b>	Ministry of Economic Development	MATTM, MIT	RSE, ISPRA, GSE, ENEA, PoliMI	Energy, emission, economy	2030/2040	EU framework	-37% GHG
<b>LTS</b>	Ministry of the Environment and Land and Sea Protection	MISE, MIT, MIPAAF	RSE, ISPRA, GSE, ENEA, PoliMI, CMCC	All sectors	2050	EU/UNFCC framework	Carbon neutrality
<b>H2 Strategy</b>	Ministry of Ecological Transition	MITE	RSE	Hydrogen Economy	2030	IT economy	Work in progress
<b>FF 55</b>	Ministry of Ecological Transition	MITE	RSE, GSE	New 2030 target	2030/2050	EU framework	EU: -55% GHG
<b>ETP</b>	Interministerial Committee for the Ecological Transition	MITE, MISE, MIMS, MEF, PCM, MLPS, MSCT	RSE, ISPRA	Decarbonization	2030/2050	International framework	Carbon neutrality



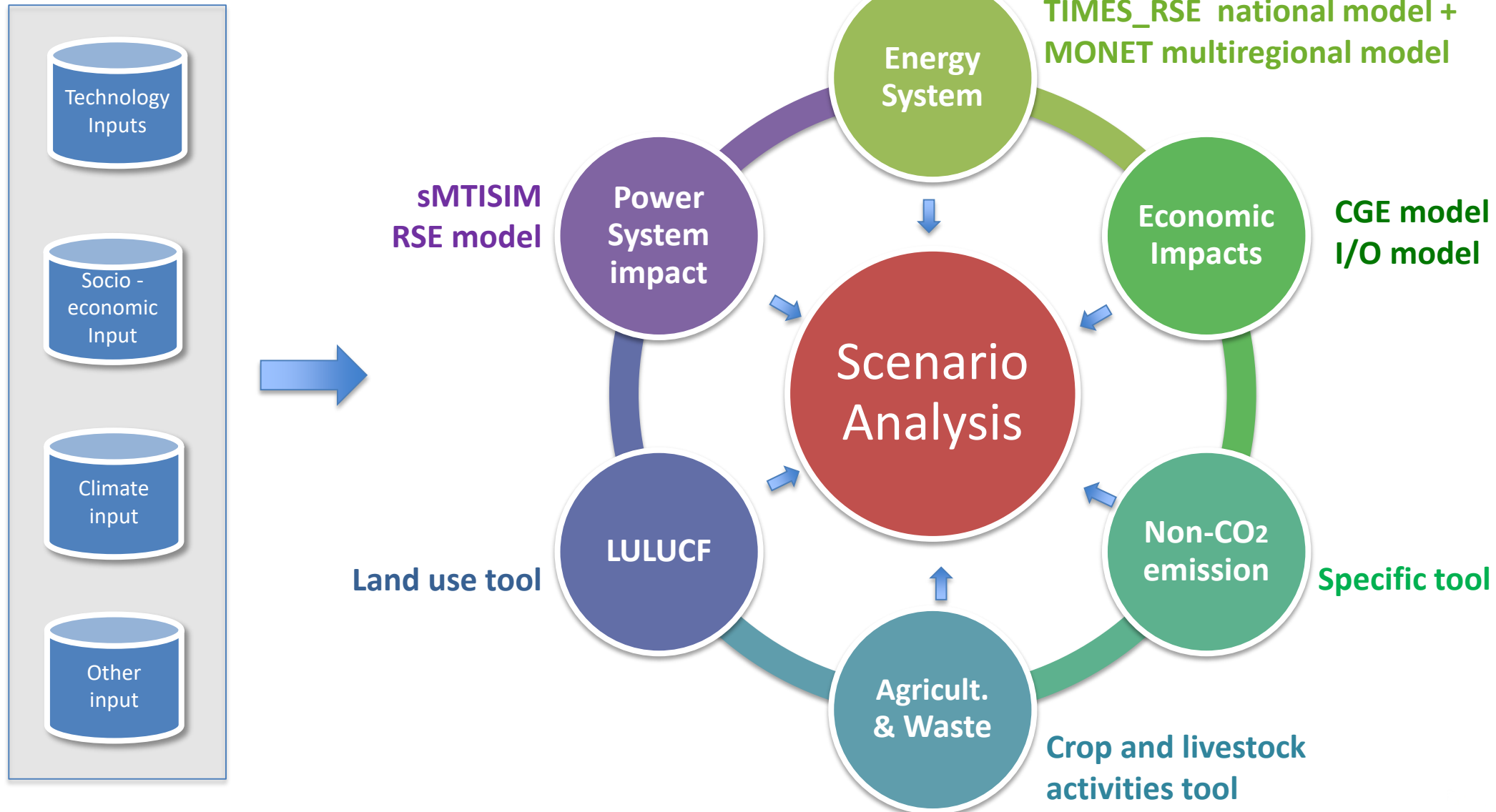
# LTS Approach in Italy

Integration and collaboration are key elements in LTES planning.

- 4 Ministries
- 6 Research centers, Agencies and Academies
- Sectoral working groups
- synergies and interaction among research centers
- Stakeholder and citizen involvement

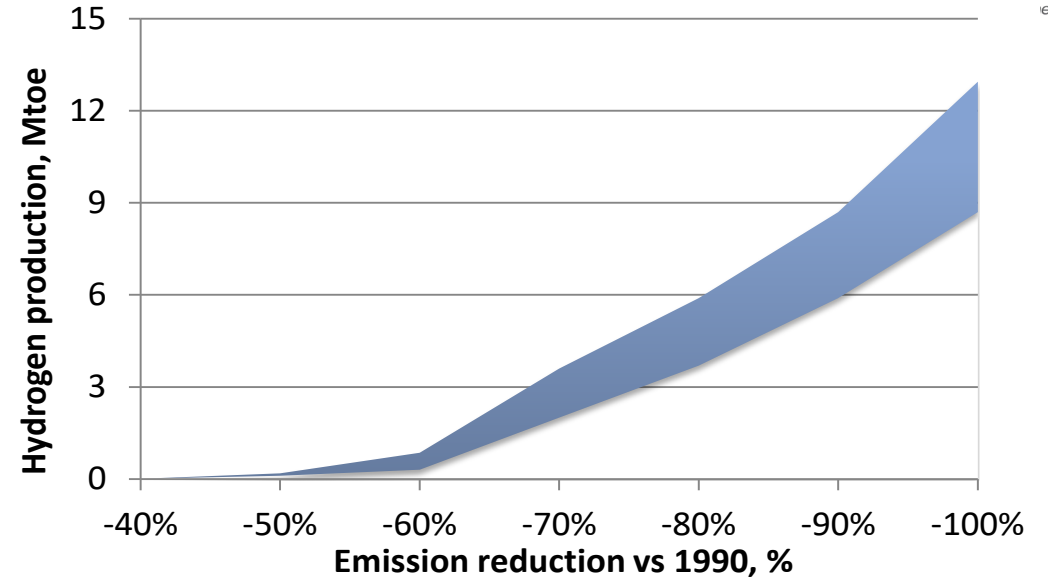
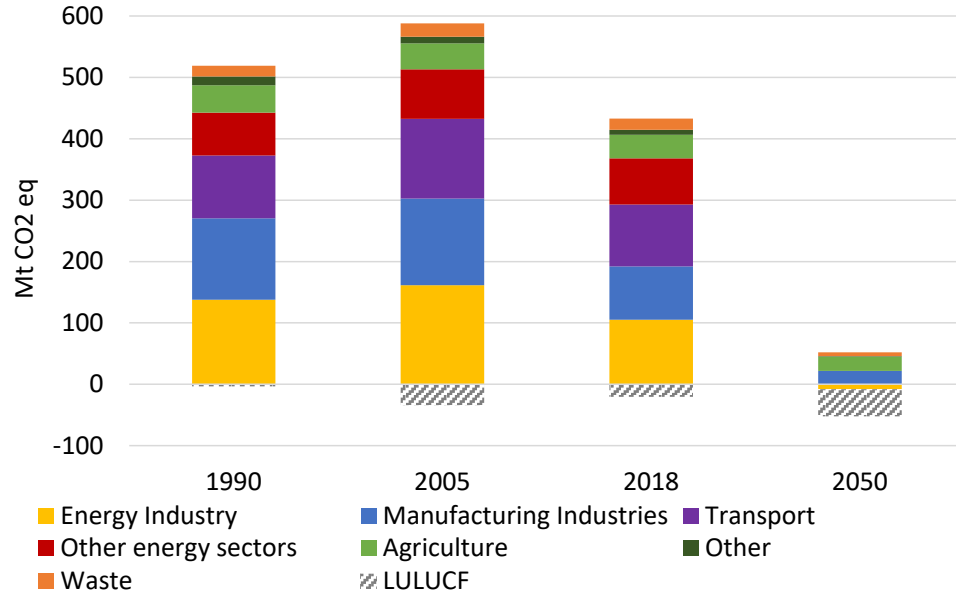


# LTS modelling framework



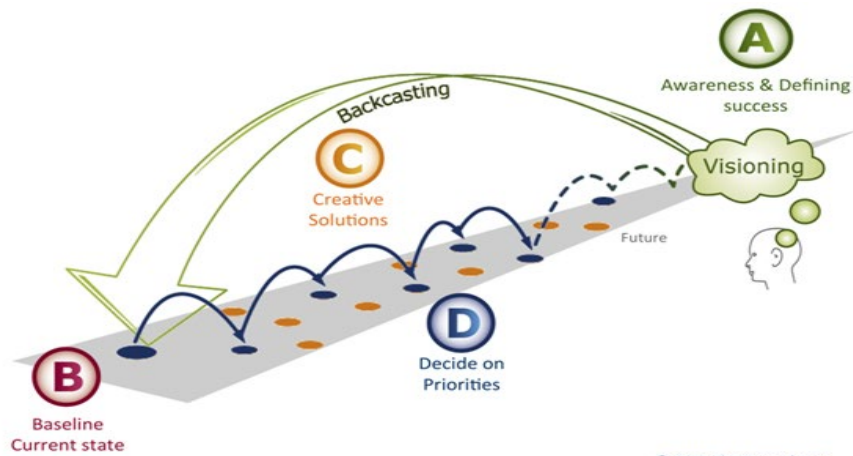
# Insight into scenario use and results

Target ambition Assessment

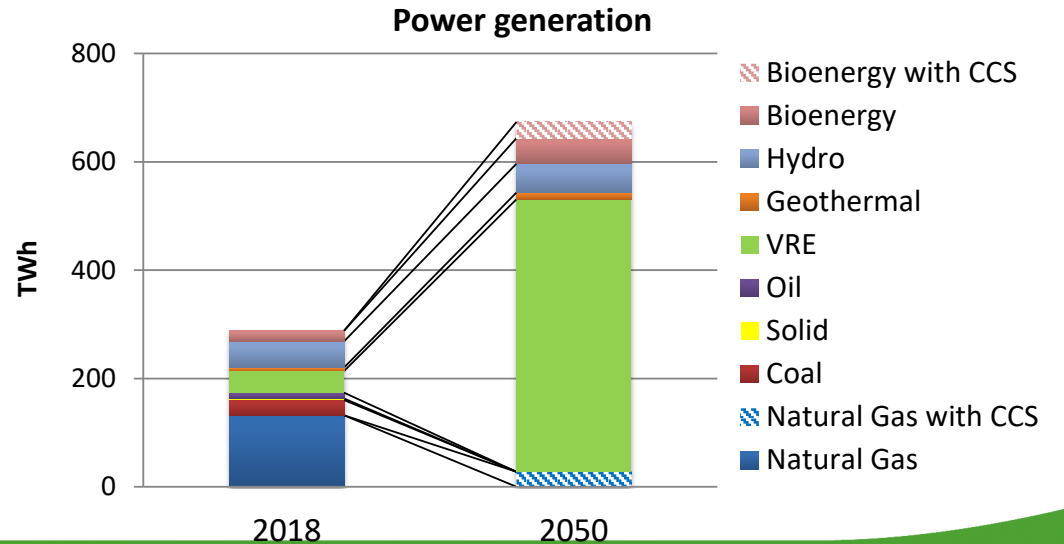


Innovation analysis and planning

Back-casting – pathways least cost



www.naturalstep.ca/abcd



Plan Infrastructure development

# Lessons Learned

- **System approach and integration of energy and climate with other disciplines is essential**  
*energy, economy, environmental, air quality  
agriculture and carbon sink forestry  
social aspects and behavioral changes*
- **Citizens and key stakeholders' involvement** to build consensus from the early stages of the long-term energy planning process.
- **Good knowledge of the national energy system's characteristics** to identify key uncertainties and challenges  
*Resources and technology potential  
capacity and critical issues of the transmission and distribution grid  
interconnections*
- Good understanding of the technology portfolio available (characteristics, costs, development status, social acceptability...)
- **Complicated issues requires more complicated models and analyses.**
- Scenario is a perfect tool to inform policy makers.
- **Scenario modelling is very important for LTES but is only a part of the scenario planning.**



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