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## **FEEM – Fondazione Eni Enrico Mattei**

### **Research for a sustainable future**

Samuel Carrara

Fondazione Eni Enrico Mattei (FEEM), Milan, Italy

Renewable & Appropriate Energy Laboratory (RAEL), Energy & Resources Group (ERG), University of California, Berkeley, USA

# FEEM – Fondazione Eni Enrico Mattei

Fondazione Eni Enrico Mattei (FEEM) was founded in 1989. FEEM is entitled to Enrico Mattei, the founder of Eni and a leader in the national industrial system and international relations of the post-war period. Mattei's most valuable heritage for FEEM is the ability to imagine the future and to meet today and tomorrow's challenges.



**Environment**, **Energy** and **Economy** – the three E's of the logo – and the **deep interconnections** among these three fundamental spheres of sustainable development, represent the **identity of FEEM** and are at the **core of its research activities**.

The activities of the Fondazione are carried out at the headquarters in Milan, at the offices in Venice – which were opened in 1996 – and at the offices in the Basilicata Region that were opened in 2007, as part of an institutional agreement related to Eni's activities in the area.

# FEEM mission



As a non profit, policy-oriented, international **research center** and **think-tank** on **sustainable development**, FEEM contributes to the **quality of decision-making** in **public** and **private spheres** through analytical studies, policy advice, scientific dissemination and high-level education.

Thanks to its **dissemination activities** and **international network**, FEEM integrates its high-quality, innovative and interdisciplinary research with that of the best academic institutions and think tanks around the world.

# Research for a sustainable future

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FEEM research activities are conducted by **three Research Programs**:

- **CSI** – Climate and Sustainable Innovation
- **ESP** – Energy Scenarios and Policy
- **SAS** – Society and Sustainability

Besides the three programs, FEEM has a **Local Development** area focused on research and activities for local stakeholders.

FEEM has also **cross-cutting themes** related to the three Research Programs:

- 2030 Agenda
- Climate Change & Migration
- Pathways to Sustainability in Africa

# Research for a sustainable future

FEEM research activities refer to three main **hot topics** related to the sustainable development:

**Environment & Climate Change** on the assessment of the economic and social impacts of climate change for mitigation and adaptation policies

**Energy Challenges** on the transition toward decarbonization and digitalization

**Economy & Society**, on the contribution of the private sector to sustainable development, smart and resilient cities, Agenda 2030 implementation

These three topics of global relevance are also at the core of FEEM research activities at the **local level**.

FEEM carries out **outreach activities** through partnerships & networks, support to policy, training & education, and dissemination & engagement.

As a think tank FEEM shares its results with the academic international community, institutions and policy makers, and it disseminates evidence-based knowledge to a large, non specialized audience to shape the public debate at the national and local levels.



# Focus on SDSN Italia



The **2030 Agenda for Sustainable Development** was presented in 2015 in New York by the former Secretary General of the United Nations Ban Ki-moon, and adopted in an extraordinary UN summit with the participation of over 150 heads of states and governments. The Agenda defines the rights and responsibilities of all the Countries considered as key actors and recipients of the opportunities offered by sustainable development. It sets 17 **Sustainable Development Goals** to be achieved within 2030.

The **UN Sustainable Development Solutions Network (UN SDSN)** was founded in 2012 with the aim to mobilize the academic and scientific worlds to promote sustainable development, working in close cooperation with the UN Agencies, international financial institutions, the private sector and the civil society.

Following the launch of the 2030 Agenda, in 2016 FEEM became the **hosting institution of SDSN Italia**, the Italian hub of the UN SDSN.

SDSN Italia is connected to SDSN Mediterranean hosted by University of Siena.

## Two examples: SDG7 and SDG13

- **SDG 7** → *Ensure access to affordable, reliable, sustainable and modern energy for all*
  - 7.1: Ensure universal access to affordable, reliable and modern energy services
  - 7.2: Increase substantially the share of renewable energy in the global energy mix
  - 7.3: Double the global rate of improvement in energy efficiency
  
- **SDG 13** → *Take urgent action to combat climate change and its impacts*
  - 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
  - 13.2: Integrate climate change measures into national policies, strategies and planning
  - 13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

# The WITCH model: introduction

## WITCH – World Induced Technical Change Hybrid

- Climate-energy-economic IAM (Integrated Assessment Model) → Socio-economic impacts of climate change
- Hybrid: aggregated, top-down, inter-temporal optimal-growth model + disaggregated description of the energy sector

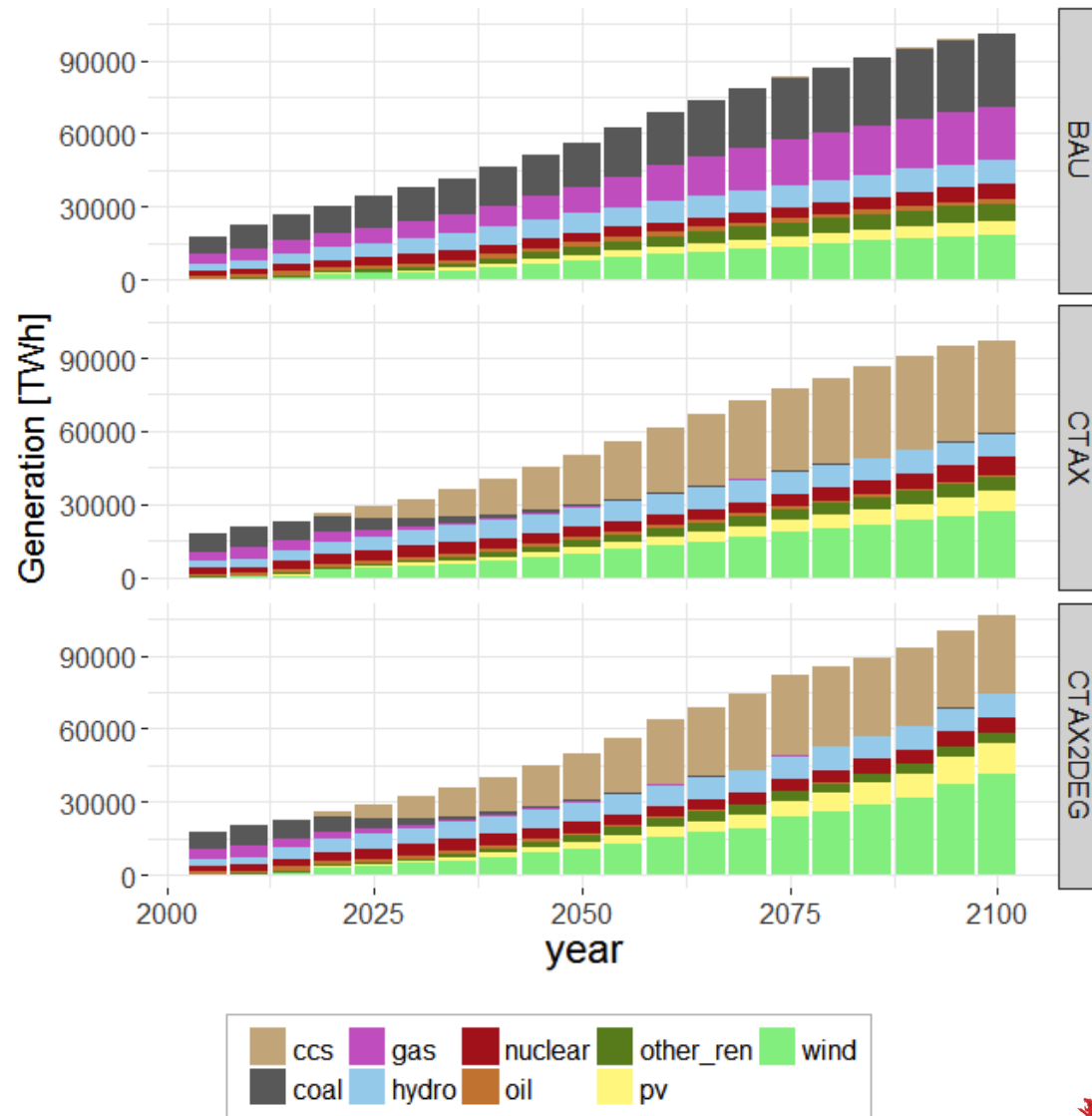


CAJAZ  
(Canada, Japan,  
New Zealand)

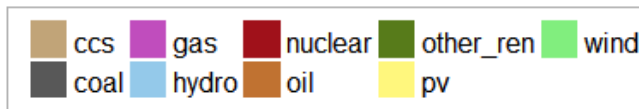
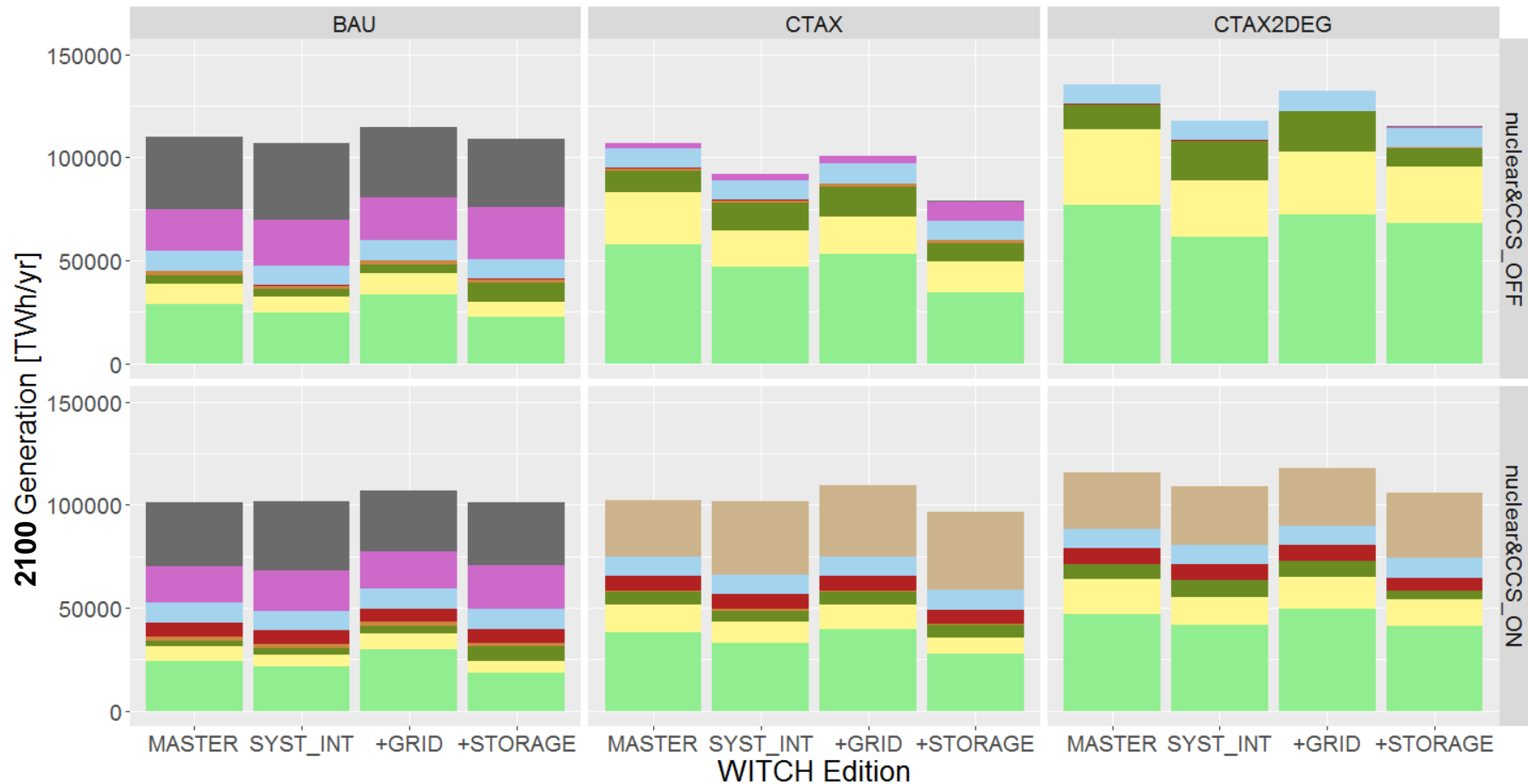
KOSAU  
(R. of Korea, South  
Africa, Australia)



# The WITCH model: some examples (I)



# The WITCH model: some examples (II)



# Marie Skłodowska-Curie Actions – The MERCURY project



MERCURY – Modeling the European power sector evolution: low-carbon generation technologies (renewables, CCS, nuclear), the electric infrastructure and their role in the EU leadership in climate policy

H2020-MSCA Marie Skłodowska-Curie 2015 Global Fellowship



# The MERCURY project

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## From the proposal abstract:

*“The reduction of greenhouse gas emissions is a vital target for the coming decades. From a technology perspective, power generation is the largest responsible for CO<sub>2</sub> emissions, therefore great mitigation efforts will be required in this area.*

*From a policy perspective, it is common opinion that the European Union is and will remain leader in implementing clean policies.*

*Basing on these considerations, the **power sector** and the **European Union** will be the two key actors of this project.*

*The main tool adopted in this work will be **WITCH**, the integrated assessment model developed at Fondazione Eni Enrico Mattei (FEEM).”*

# The MERCURY project (??)





FONDAZIONE ENI  
ENRICO MATTEI



**THANK YOU  
FOR YOUR ATTENTION**

**[www.mercury-energy.eu](http://www.mercury-energy.eu)  
[www.witchmodel.org](http://www.witchmodel.org)**



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