Leveraging the Scientific Value of The joint AU-EU research in LEAP-RE

Prof. Emanuela Colombo, PhD
Rector's Delegate to Science Diplomacy
UNESCO Chair in Energy for Sustainable Development
National representative within the AU-EU HLPD Bureau and SOM
Politecnico di Milano

Premise 1 - The Complexity of the African Energy Challenge

- The **energy-climate-development nexus** is more crucial than ever
- **Africa** will have crucial influence **for the GLOBAL & JUST energy transition**

Continental Level

- Africa needs **a sustainable energy system** (reliable, affordable & clean) to boost socio-economic development and achieve the **Agenda 2063**

17% global population,
6% of global energy demand
3% of global electricity
4% of global C02 emission

Global Level

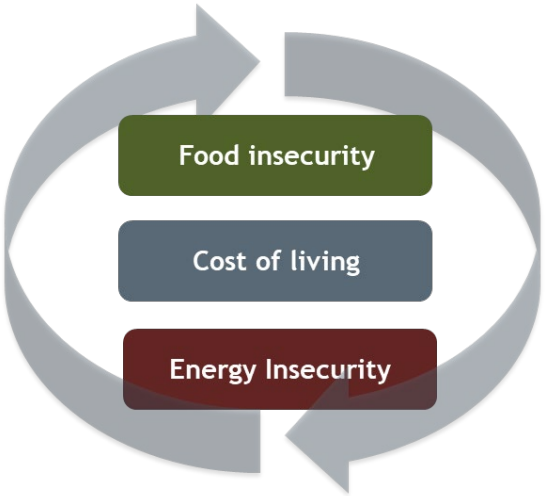
- **Africa's** energy transition will be crucial to the global achievement of the **Agenda 2030** and the **Paris Agreement's** pledges, being the continent home to many of **essential raw minerals**

We are in the Era of Uncertainty & Technological development

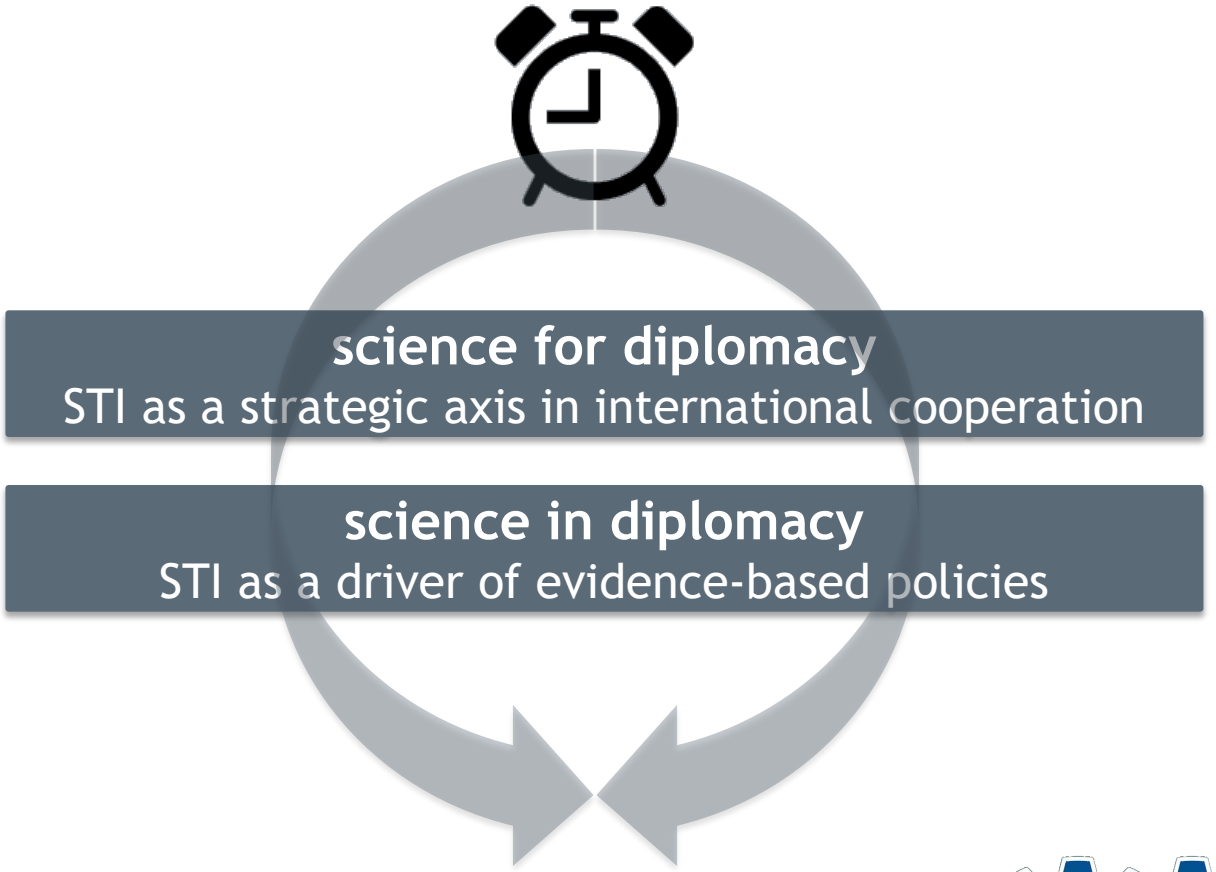
- Effects are expected to be stronger for the **most vulnerable regions**
- Economic crisis may **reduce investment and harshen inequalities**
- Loss of job can impact on **energy services affordability**

BUT

- Technology have developed at fast speed
- New solutions comes faster than expected



Premise 2 - New Role of Science, beyond Science



ACADEMIC MISSION

Science diplomacy is not new, but it is more important than ever due to the scientific dimension of current global challenges. October 29th ***2020*** *Commissioner for Innovation, Research, Culture, Education and Youth*

Premise 2 - New Role of Science, beyond Science

Science Diplomacy plan 2023-2025 @PoliMI

In the period 2023-25 Polimi :

- will consolidate paradigms for **international cooperation in research & capacity building**
- will strengthening **institutional relationships** with international organisation, with specific attention to Africa
- will **train young researchers** in the ability to inform the policy process with evidence-based from scientific research
- will actively **participate in major advocacy networks and think tanks** to bridge the gap between science & policy

Cooperation & Development	International Organisations	Capacity Building on SD	Networking for advocacy

100 Cooperation initiatives

11 Departments involved

5 Continents

66 initiatives in Africa

2 UNESCO CHAIRS

- Energy 4 Sustainable Development
- Architectural Preservation and Planning in World Heritage Cities

3 dialogues

UNU - Water/Energy

UNIDO - Finance for development

UN-HABITAT - Metroplitan hub

1 course for Ph.D students in the AY 2023-2024

Science Diplomacy for researchers: *Filling the gap between science and policy within the global challenges -*

National

Italian Science Diplomacy network

European

EU Science Diplomacy Alliance

Global Level

OECD-NEA – Nuclear for society

... only an example

Opportunity 1 - The AU-EU partnership on STI and the CCSE

Key areas of the AU-EU Innovation Agenda	Key areas of the CCSE partnership
Public Health	Renewable energy & Energy efficiency
Green Transition	climate change
Innovation and Technology	human capital development & capacity-building,
Capacity for science	open data & open access

Implementation pathways

New calls for proposal

HORIZON, ERASMUS +, MARIE CURIE….

Opportunity 2 - The LEAP-RE Innovative «Experience»

www.leap-re.eu

Research and Innovation Action

- **LEAP-RE** is a Research and Innovation Action (RIA) conducted by a Consortium **of 83 partners from 33 countries from Europe and Africa** who submitted to H2020 LC-SC3-JA-5-2020

Policy Dialogue

- LEAP-RE is promoted within **the The EU-Africa High Level Policy Dialogue (HLPD) on science, technology and innovation (STI)** to enforce the mutual commitment to action in renewable energy

Added Value of LEAP-RE 1: The Multistakeholder perspective

The partnership value Research, Cooperation and Science Diplomacy

Pillar 1

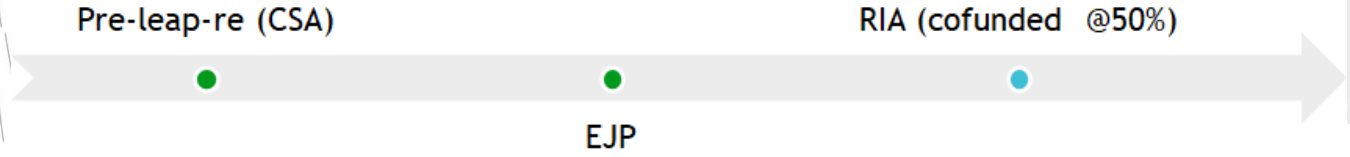
External Research funding and capacity building activities - implemented through open calls for proposal for R&I projects, funded by the LEAP-RE funding agencies (including national, regional funding agencies or private players)

Pillar 2

Internal Consortium R&I projects and capacity building activities with substantial financial contributions from the research institutions, implemented by consortium members.

Pillar 3

Management, coordination, monitoring and evaluation and development of the future long-term collaboration model of the AU-EU partnership in RE



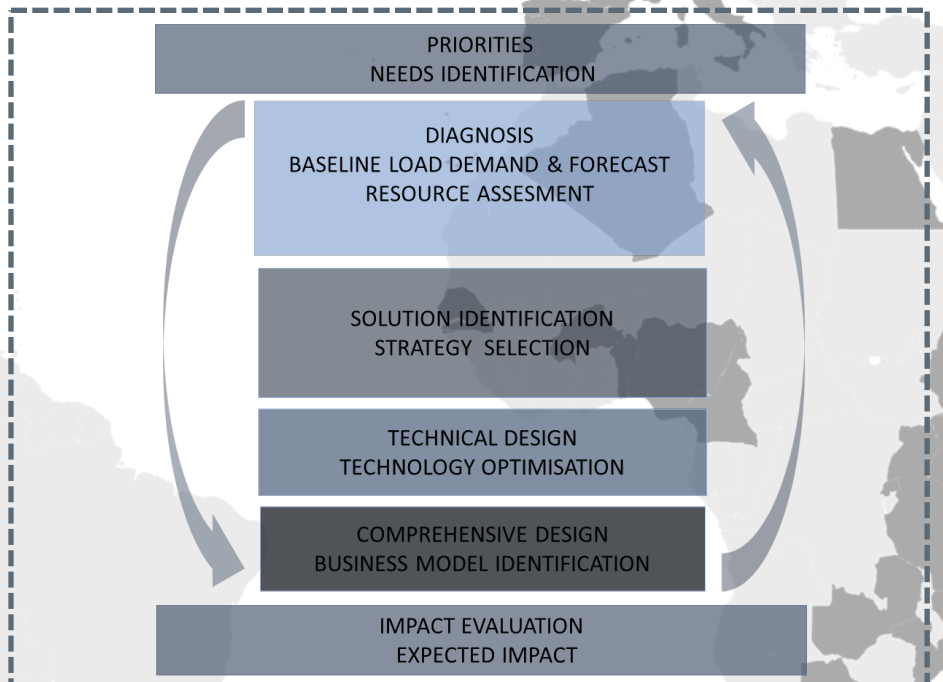
- Research institutions as funding agencies with 50%
  - Confirming commitment and feasibility of the approach.
- Inclusive participation of players without their national funding agency
- A space to generate scientific coordination within the research community itself

Added Value of LEAP-RE 1: The scientific approach

The Scientific value aside the MARs

1. Mapping joint research and innovation actions and resources for future RES development
2. End-of-life & second-life management and environmental impact of RE components
3. Smart stand-alone systems (SAS) -
4. Smart grid (different scale) for off-grid application -
5. Processes and appliances for productive uses (PRODUSE)
6. Innovative solutions for priority domestic uses (clean cooking and cold chain)

Technical Subjects



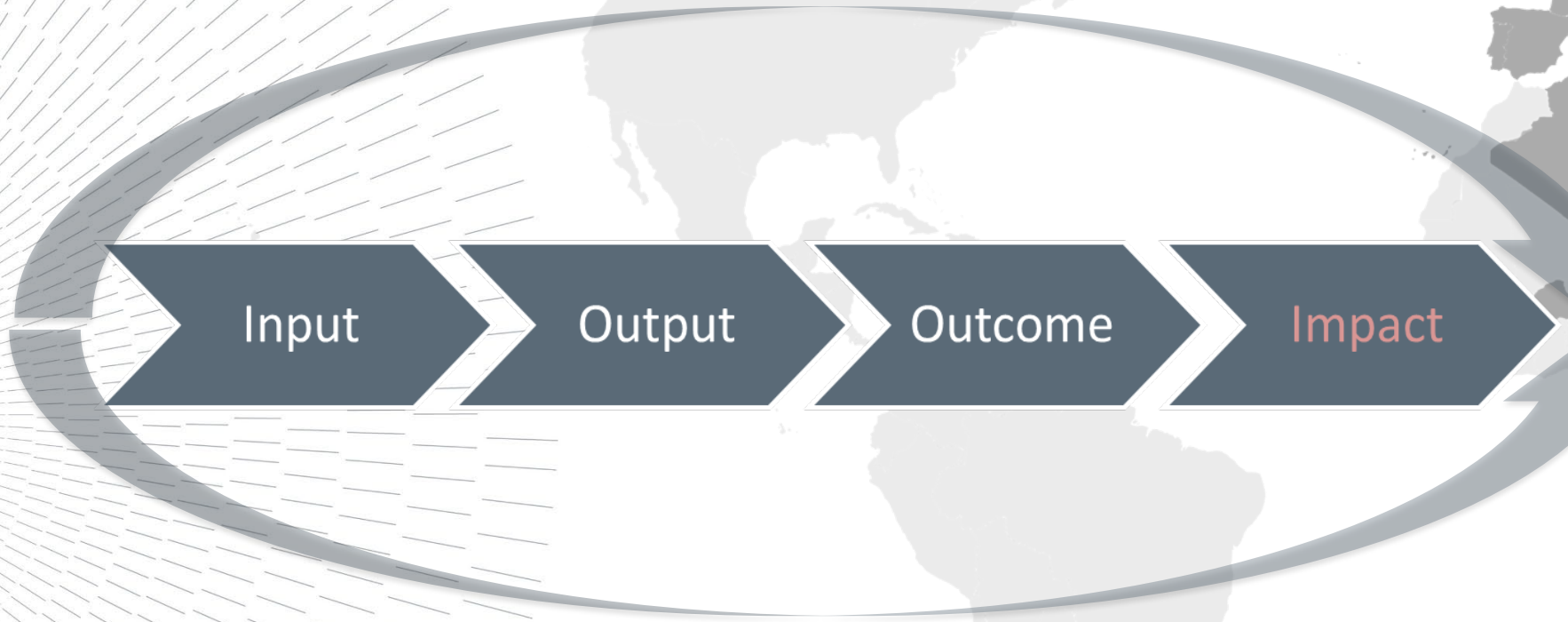
Comprehensive Approach

PRE-LEAP =>LEAP-RE => NEW CALLS…..FLOW OF LEARNING OUTCOMES

- This approach 1.0 was driven by specialistic expertise and a long term process
- The LEAP- RE MEL process can provide input to its evolution towards a 2.0
- Thanks to a research institutions / funding agencies can

Added Value of LEAP-RE 2: The Impact Assessment Framework

The Impact Framework as an asset toward a long lasting learning process

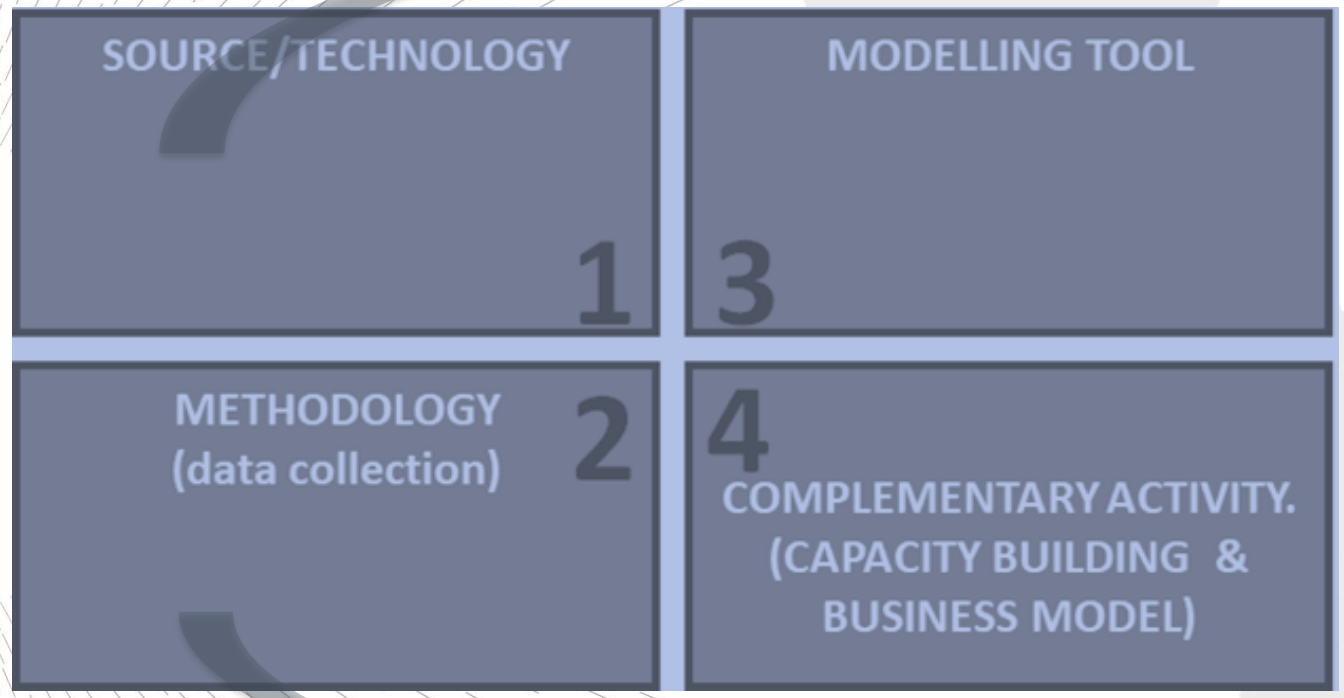


THIS PROCESS IS PERCEIVED AS DIFFERENT BY DIFFERENT STAKEHOLDERS

- LEAP-RE was designed along the results chain
- Output, Outcome, Impact associated to different responsibilities, but all within the LEAP-RE framework
- This was a 1.0 approach with some +/-
- The LEAP- RE MEL process can provide input to its evolution towards a 2.0

Added Value of LEAP-RE 3: Joining forces – Capacity building and more

The scientific coordination can generate allows to create a community



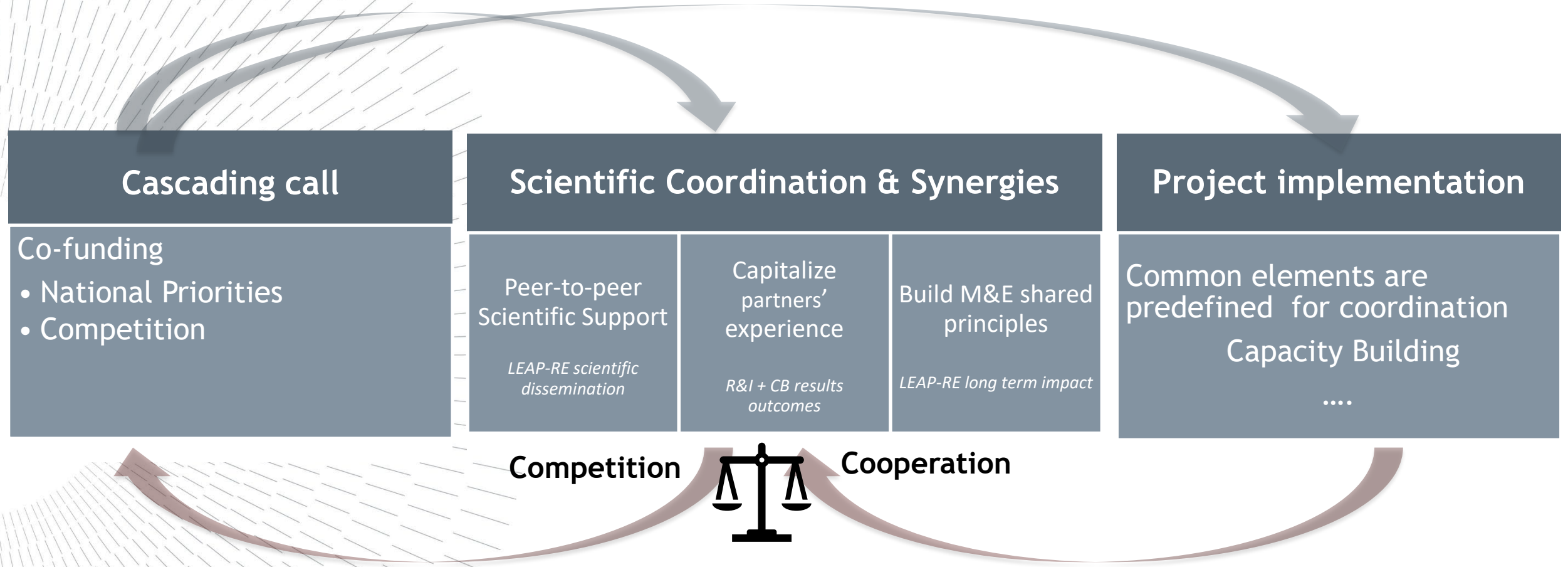
Data Collection

Energy Modelling

Capacity Building

- Scientific Coordination was designed in LEAP-RE
- Synergies were created and elements like the RES School are “institutionalised”
- Open Modelling is also valorised based on common interests and genuine perspective on research value
- The LEAP- RE MEL process can provide input for improving

Added Value of LEAP-RE 3



- The Multistakeholder perspective aligned with the pillars structure and an inclusive approach
- The Scientific Comprehensive Approach
- The Impact Assessment Frame long the results chain aligned with the Theory of change
- The power of Joining forces across research institutions on predefined aspects

"The only way to discover the limits of the possible is to go beyond them into the impossible"

B.Pascal

What if ???

… if we could re-design "LEAP-RE like project" with the experience of today…?