

INTERNATIONAL RENEWABLE ENERGY AGENCY



IRENA

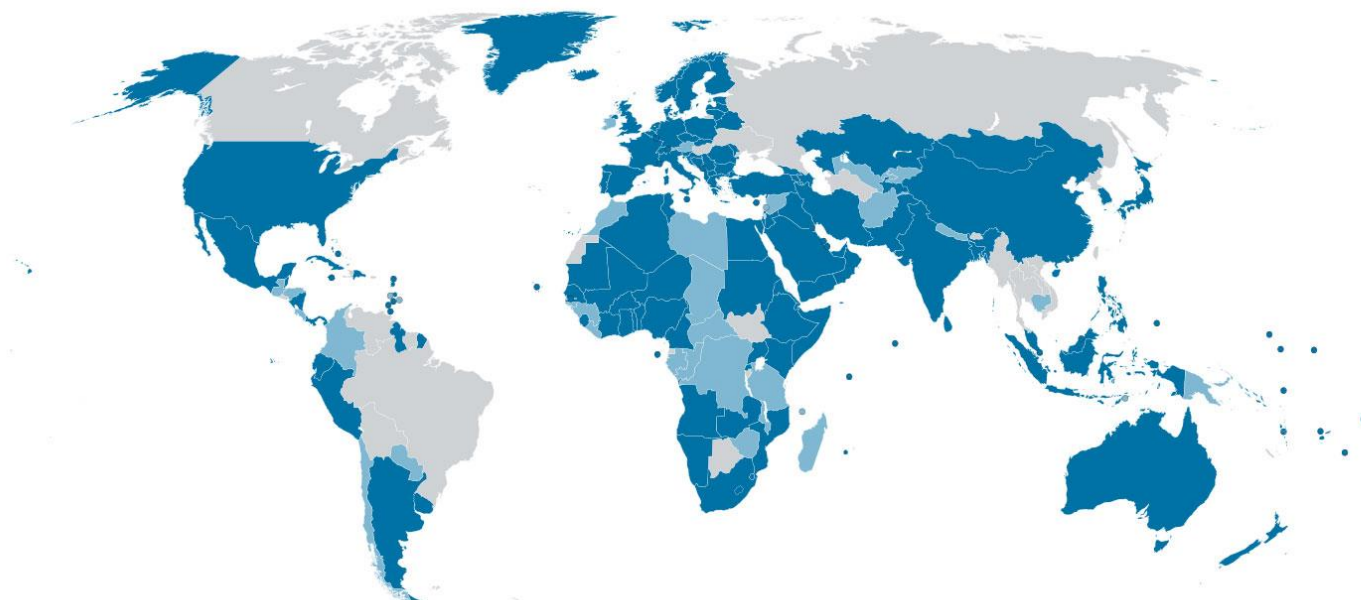
International Renewable Energy Agency

Renewable Energy Technologies and Innovation

Roland Roesch

**“Towards a Sustainable Energy Future”
Lecture Series in the Summer Semester 2015
Bonn, Germany, 23 April 2015**

The Voice, Advisory Resource and Knowledge Hub for 170 Governments



Renewable energy can:

- Meet our goals for **secure**, **reliable** and **sustainable** energy
- Provide **electricity access** to 1.3 billion people
- Promote **economic development**
- At an **affordable cost**

Content Outline

RET Innovation Policy

Innovation and RD&D Cooperation

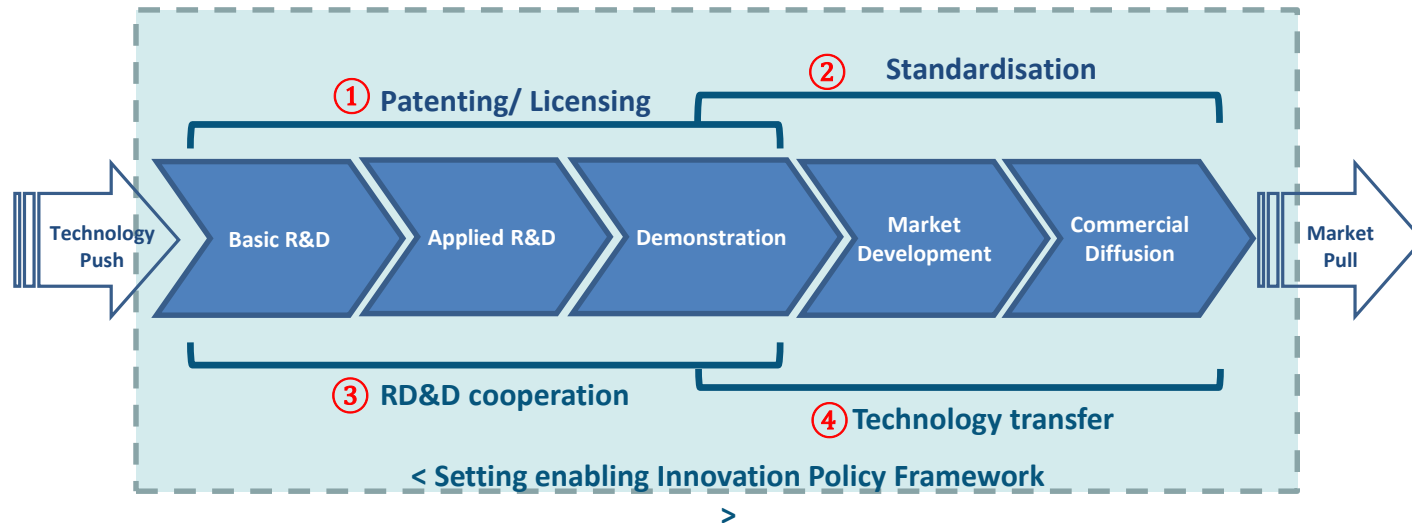
IRENA Project Navigator

RE Standards Quality Infrastructure

Overview

IRENA has initiated an assessment of various instruments for RET innovation including,

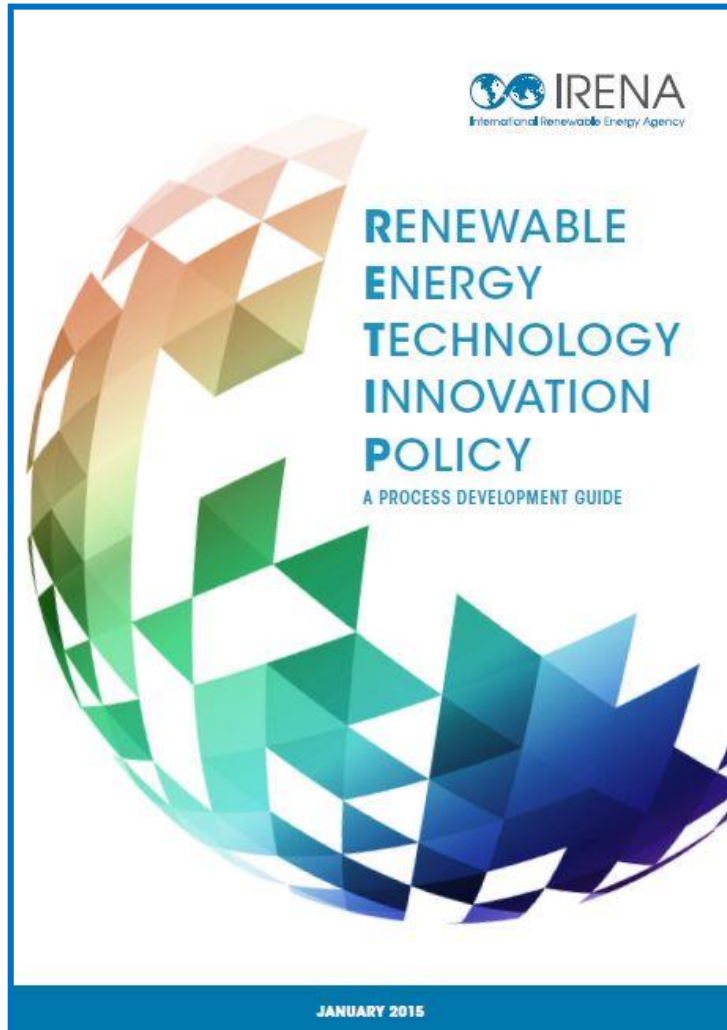
- ① RD&D trend and status information from patents;
- ② reduction of technology risk through streamlined standardisation and quality management;
- ③ current status of global renewable energy technology RD&D cooperation; and
- ④ assessment of potential technology transfer



1

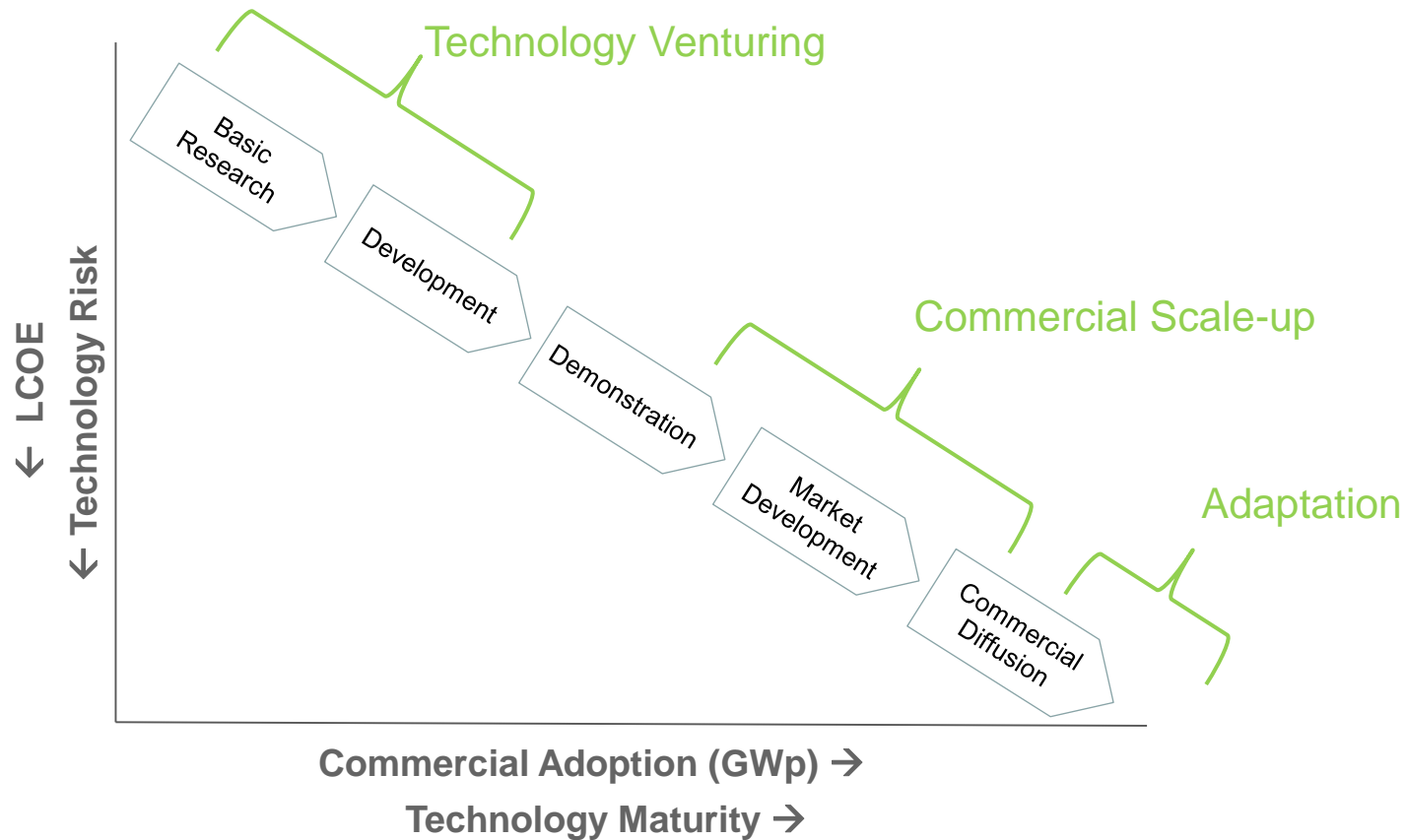
**RET
INNOVATION
POLICY**

RET Innovation can Occur in Every Country in LAC

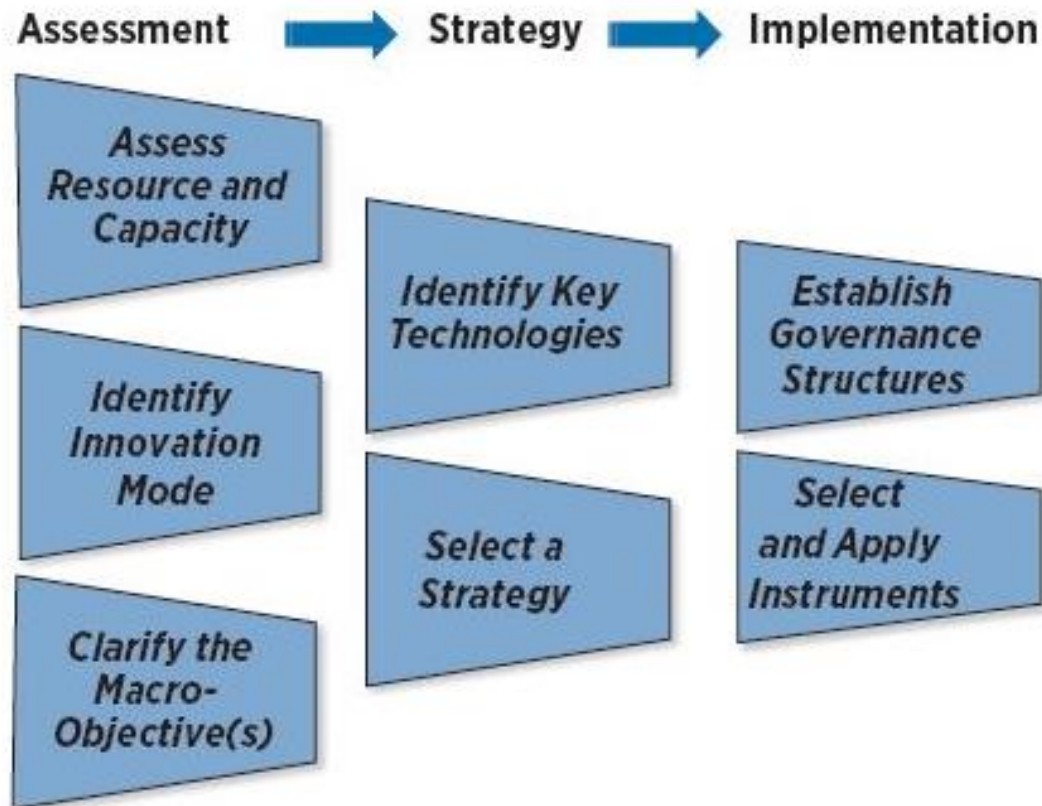


- Design appropriate RET innovation strategies
- Identify appropriate strategies or key sectors
- Create coordinated policy portfolios
- Define roles and responsibilities for implementation
- Clarify areas where IRENA can assist Member Countries (**upon request**)

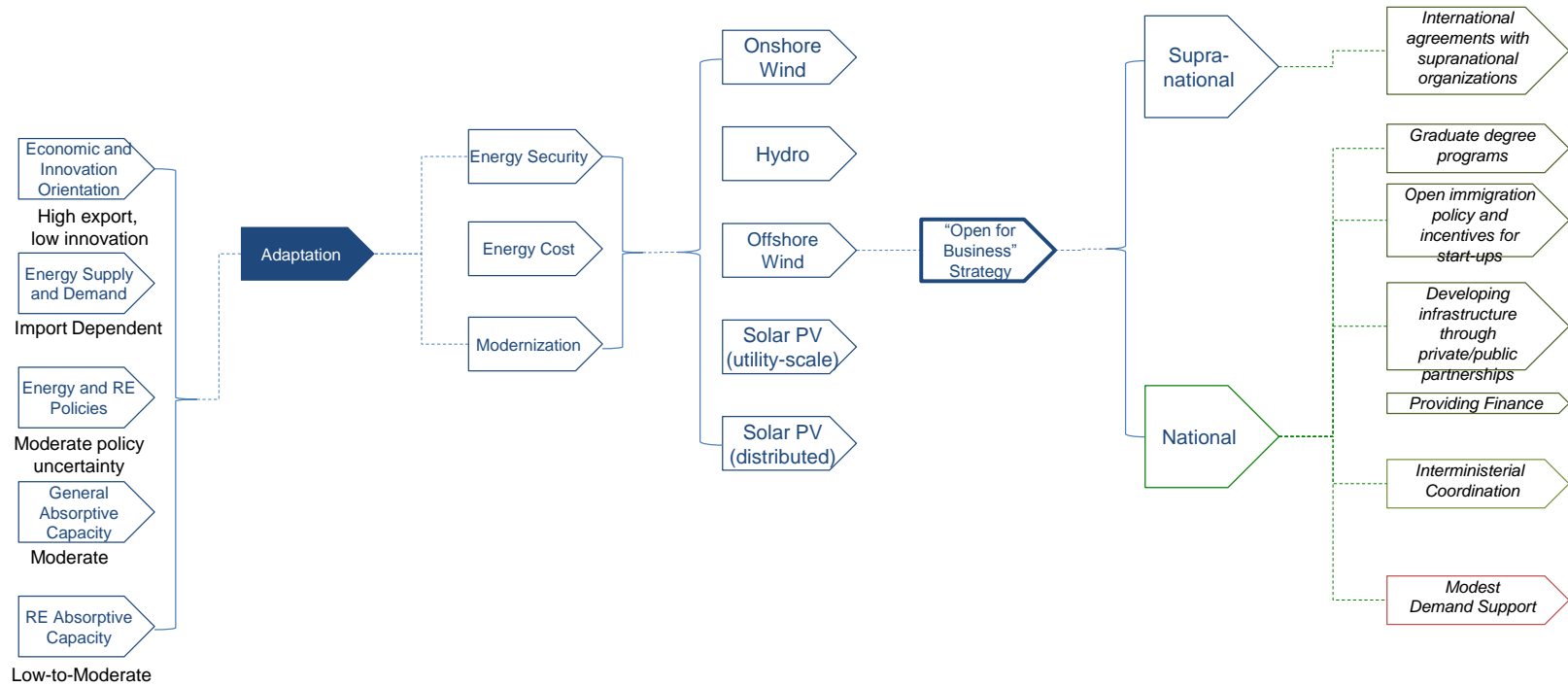
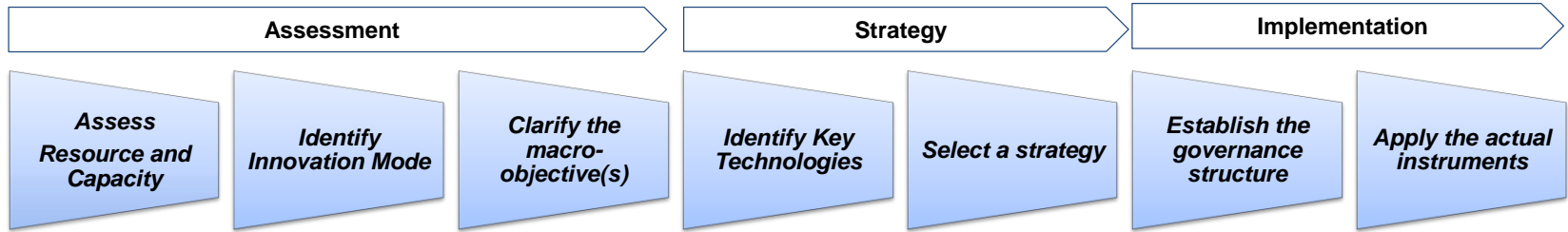
...but Country Context is Key to Define Innovation Frameworks



RET Innovation Policy Process



RETIP Applied in LAC: Chile



Resource and Capacity
Assessments inform various steps in RET innovation policy development.

Innovation Modes
provide broad indications of appropriate innovation strategies and approaches.

Macro objectives
serve to stabilize innovation policy by aligning it with long-term, broadly-shared policy goals.

Innovation Strategies
represent indicative portfolios of policies that have been deployed in conjunction.

Key Technologies
represent the full range of RETs available for innovation activities.

Governance structures
reflect the contextual factors that determine which agencies bear responsibility for various aspects of innovation policy.

Innovation policy instruments
represent the policy "toolbox" available to policy makers.

2

**INNOVATION
AND RD&D
COOPERATION**

Energy Challenges in LAC are Diverse

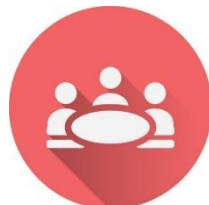


ACCESS



1.3 billion people without access to electricity

- Expansion of grid infrastructure
- Deployment of mini-grids



SECURITY



Dependency on one energy source

- Integration of VRE sources in the energy matrix



COMPETITIVENESS



Industrialization growth at competitive costs

- Lower prices to use abundant RE



MODERNIZATION



Fast industrialization

- Faster installation of RET
- Distributed generation based on RE
- Off-grid electricity sources for industry (mining)

Project objectives



RD&D of RET: Cooperation in LAC



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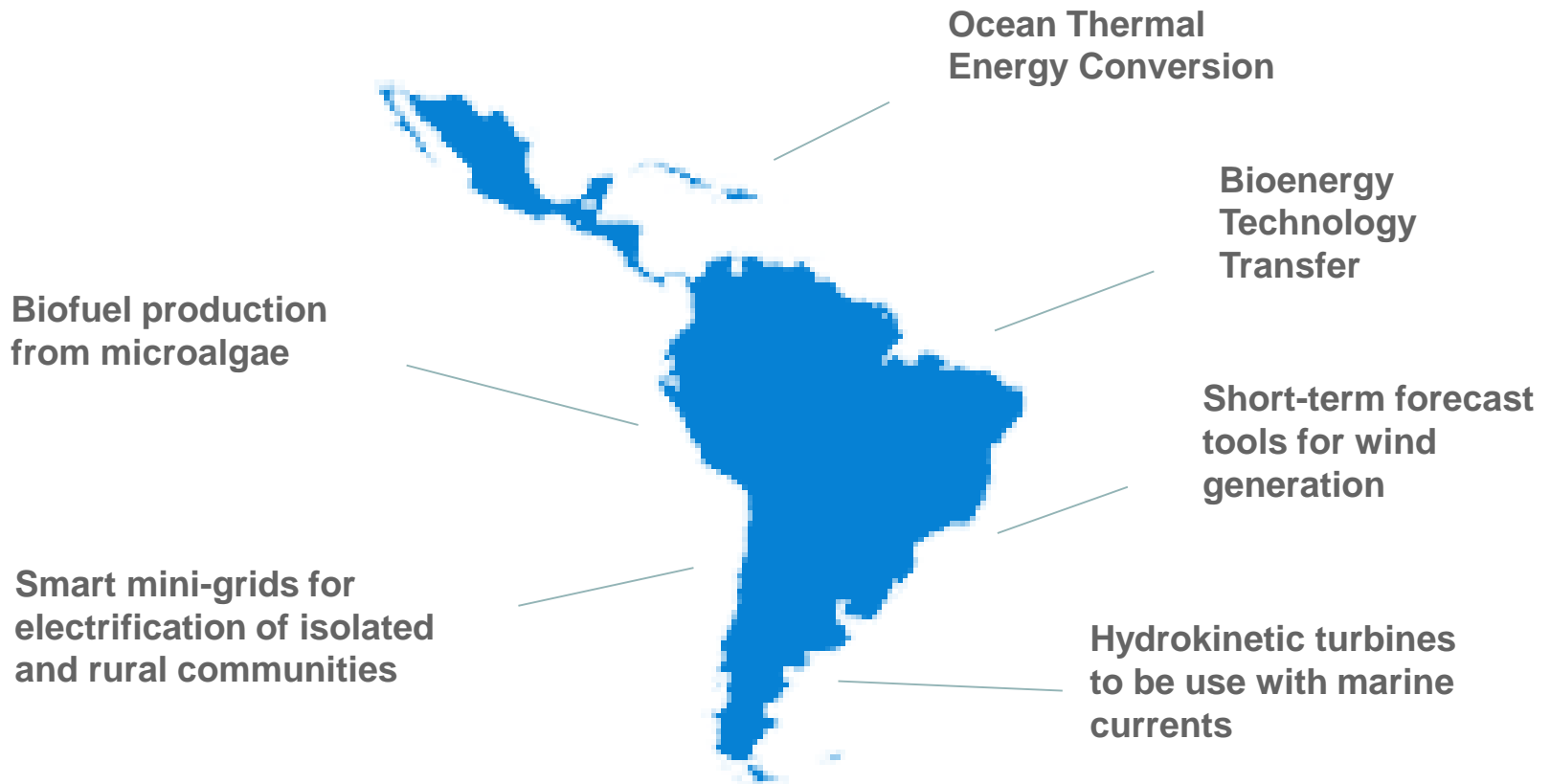
RESEARCH, DEVELOPMENT
AND DEMONSTRATION OF RET:

COOPERATION IN LAC

”

Report coming up in 2015

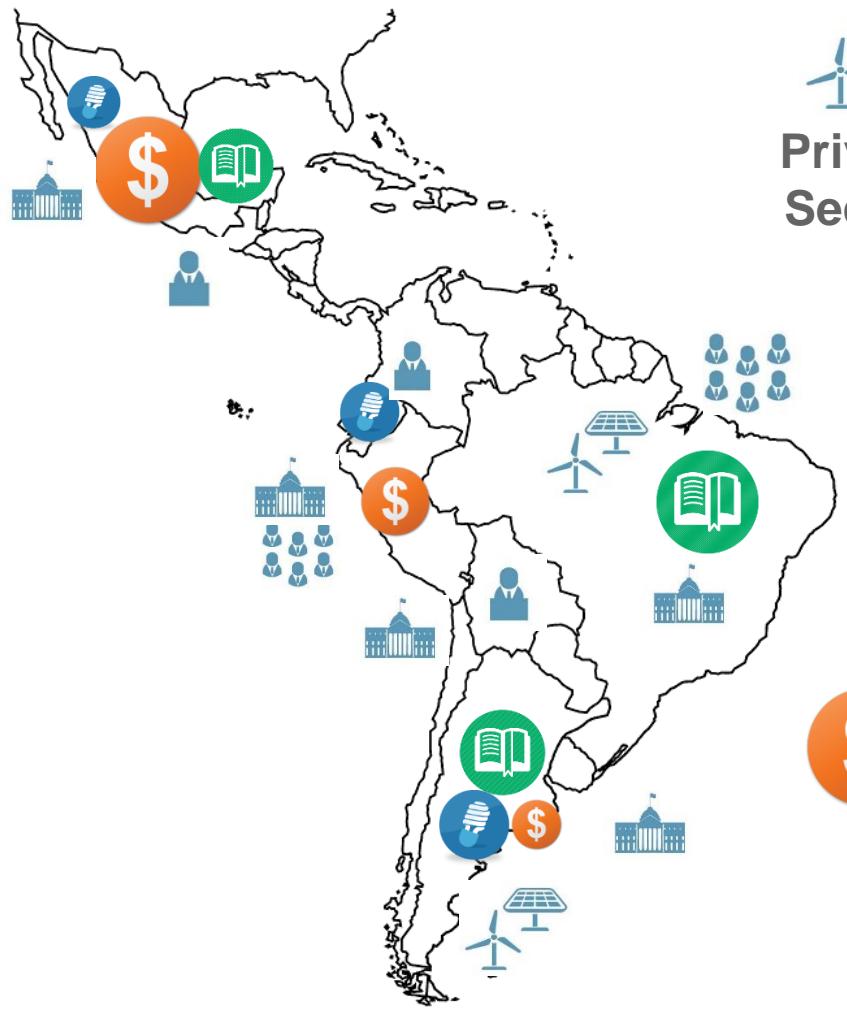
LAC is Active on RET Innovation



Inventory of Innovation in LAC

<30 COUNTRIES

124 INSTITUTIONS




Private Sector



NGO



Academia



Governmental Centres



IGO

24 INITIATIVES



RET Market

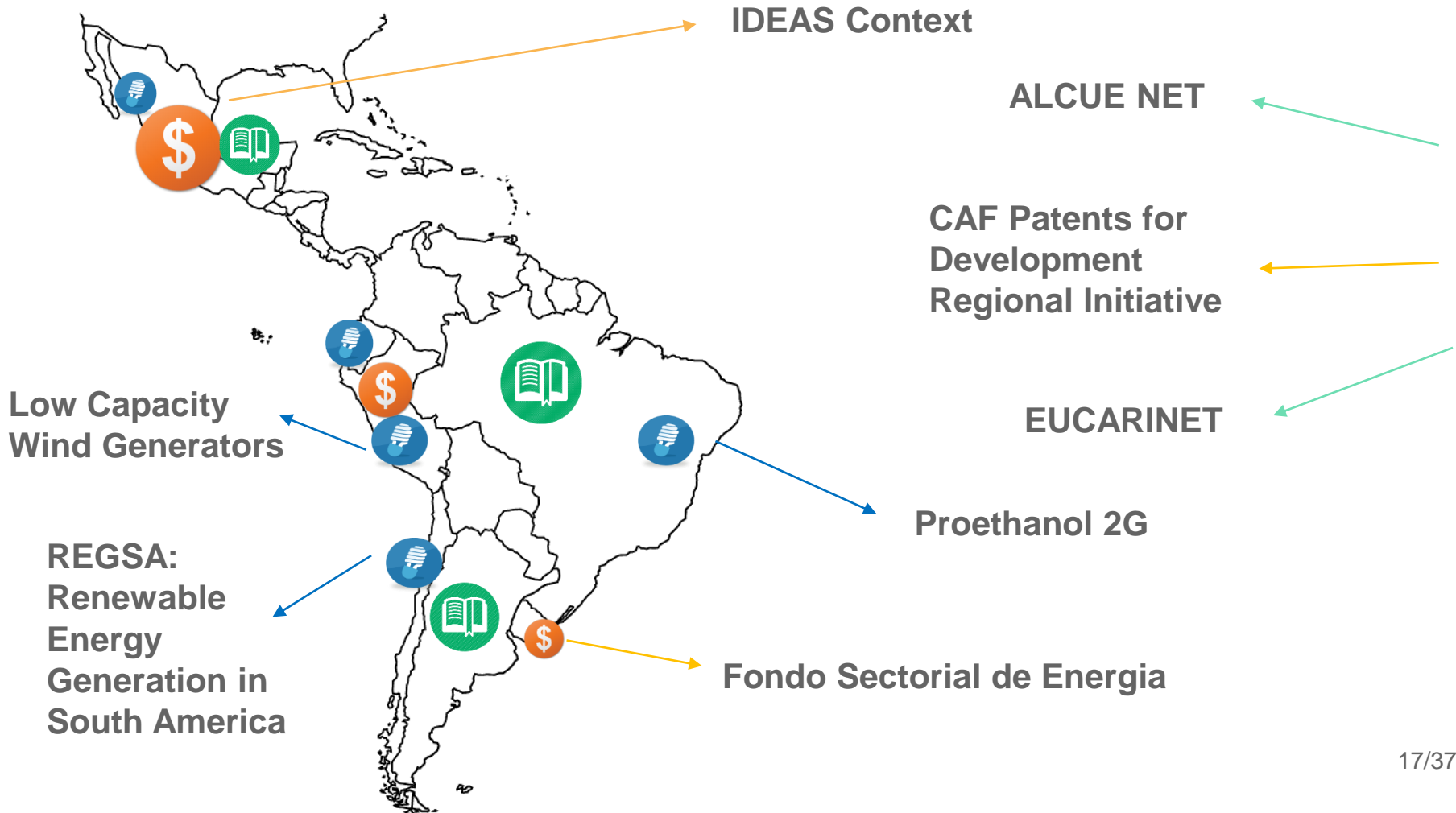


Technology



Regulation

Cooperation Catalyzes Successful RD&D in LAC



...Through a Number of Cooperation Mechanisms



Urban Living Labs

Public-Private Partnerships

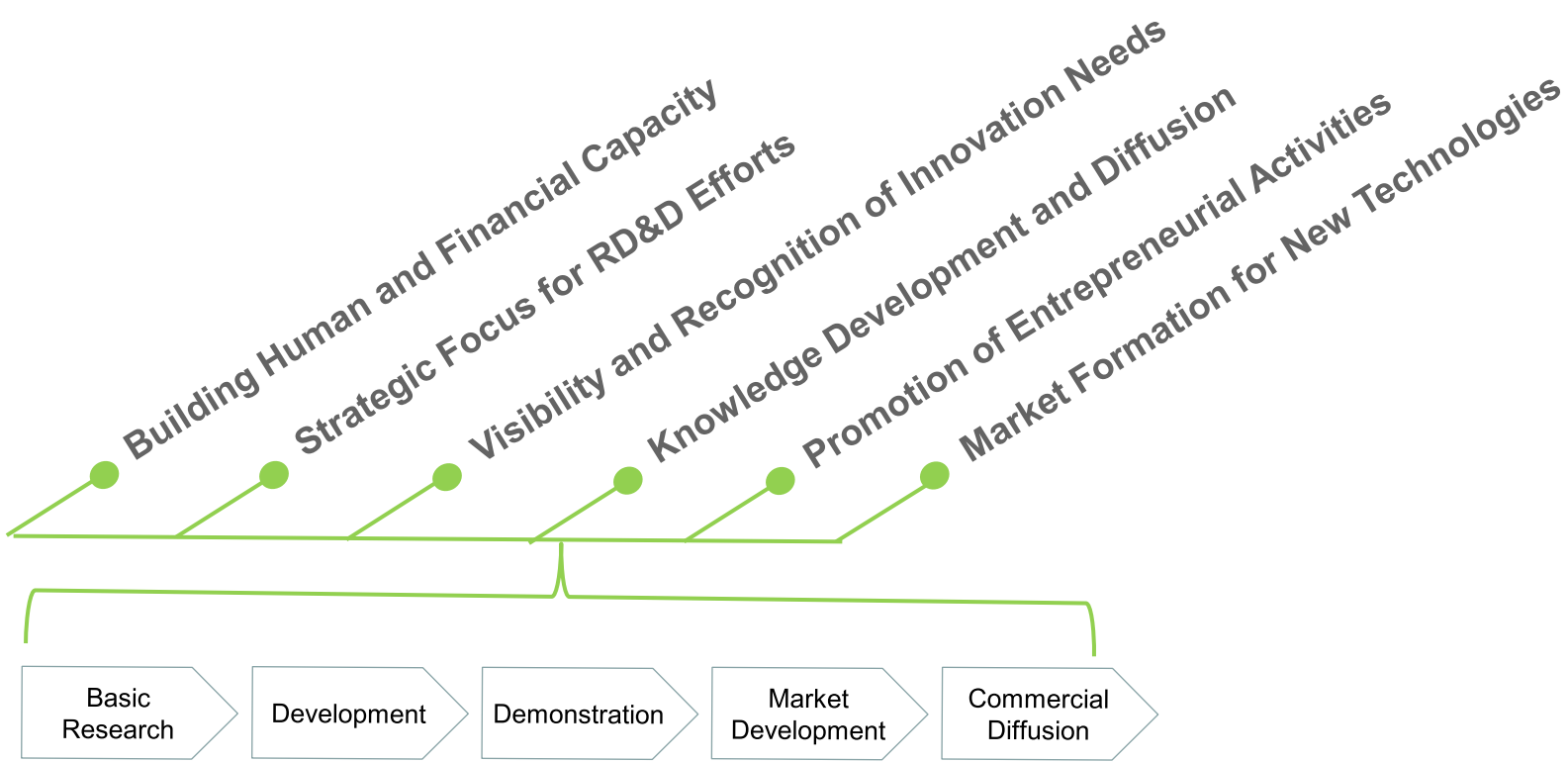
Public Procurement for Innovation

Knowledge Hubs

Intergovernmental Networks

Multilateral Agreements

Cooperation Bridges Innovation Challenges in LAC



3

**INNOVATIVE
TECHNOLOGY
OUTLOOK**

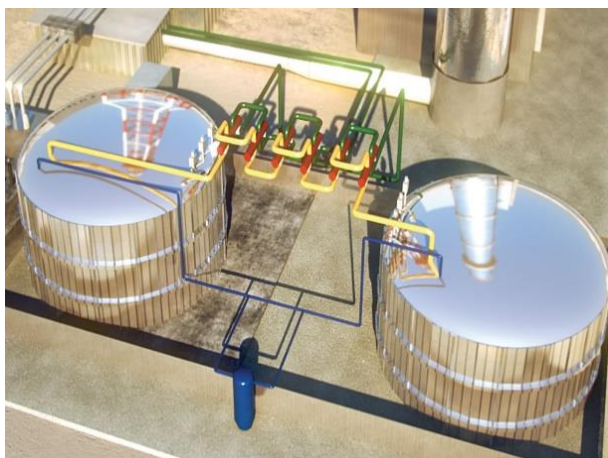
THE NEXT TECHNOLOGICAL WAVE



Mini-grids



Advanced Biofuels



Energy Storage



Off-Shore Wind

4

**THE
PROJECT
NAVIGATOR**

Content Outline

- What is the IRENA Project Navigator?
- Who will benefit from the Project Navigator?
- Components of IRENA Project Navigator

What is the IRENA Project Navigator?

Who will benefit from the Project Navigator?

Components of IRENA Project Navigator

What is the IRENA Project Navigator?

The Challenge of Renewable Energy Technology (RET) projects:

- Failures to prove bankability to funding institutions
- Insufficient knowledge on project proposal development
- Higher project development costs
- High risk of project failure

Objectives of the Project Navigator:

- Improvement of RET project proposals
- High quality implementation of RET project proposals
- Adaptation to the project's specific conditions, aims and framework
- Efficient use of funds

Scope: IRENA Project Navigator includes

- All RETs
- Different finance types: grants, loans, equity
- Project sizes: from individual use to utility scale projects
- Global: all geographical regions



● What is the IRENA Project Navigator?

● Who will benefit from the Project Navigator?

● Components of IRENA Project Navigator

Who will benefit from the IRENA Project Navigator?

Member Countries



- Compliance with stakeholders requirements
- Higher quality of RET projects
- Lower implementation costs
- Understandable administrative processes
- Efficient administration
- Capacity building

Project Developers



- Best practices
- Identification of needs/gaps
- Easier and faster funding opportunities
- Higher quality of RET projects

Municipalities



- Capacity building
- Spread social awareness
- Decision-making and investment participation

Academia



- RET project planning guidance
- Input for curriculum development
- Capacity building

Financing Sector



- Easier and faster project evaluation
- Identification of bankable projects

Sources:

- [Conserve-Energy-Future](http://conserve-energy-future.com/Images/SolarEnergy_Advantage.jpg). July 5, 2013; http://conserve-energy-future.com/Images/SolarEnergy_Advantage.jpg
- [Ecodyfi](http://www.ecodyfi.org.uk/images/turbineandshareholders.jpg). July 5, 2013; <http://www.ecodyfi.org.uk/images/turbineandshareholders.jpg>
- [Cloudfront](http://dqbasmyouzti2.cloudfront.net/content/images/articles/coins-310x224.png). July 5, 2013; <http://dqbasmyouzti2.cloudfront.net/content/images/articles/coins-310x224.png>
- OLX. December 4, 2013; <http://peshawar.olx.com.pk/academic-learning-centre-iid-153763443>

● What is the IRENA Project Navigator?

● Who will benefit from the Project Navigator?

● **Components of IRENA Project Navigator**

The RET Project Development Communication and Coordination Platform

Home

Learning section

Start a project

Financial Navigator

My account

Sign out

Welcome to the IRENA Project Navigator!



- To learn more about the renewable energy project development process and to develop bankable project proposals, please enter the Project Navigator
- When looking for funding opportunities, browse the IRENA Financial Database using the Financial Navigator
- If you are a project developer, you can create a workspace online and track your project development progress.

Choose from the Quick Access tiles below!

News

April, 2015

2nd Project Navigator Workshop, Ulaanbaatar, Mongolia (TBC)

April, 2015

Launch of Technical Concept Guidelines for utility scale PV

Learning section

Learn about project development

Start a project

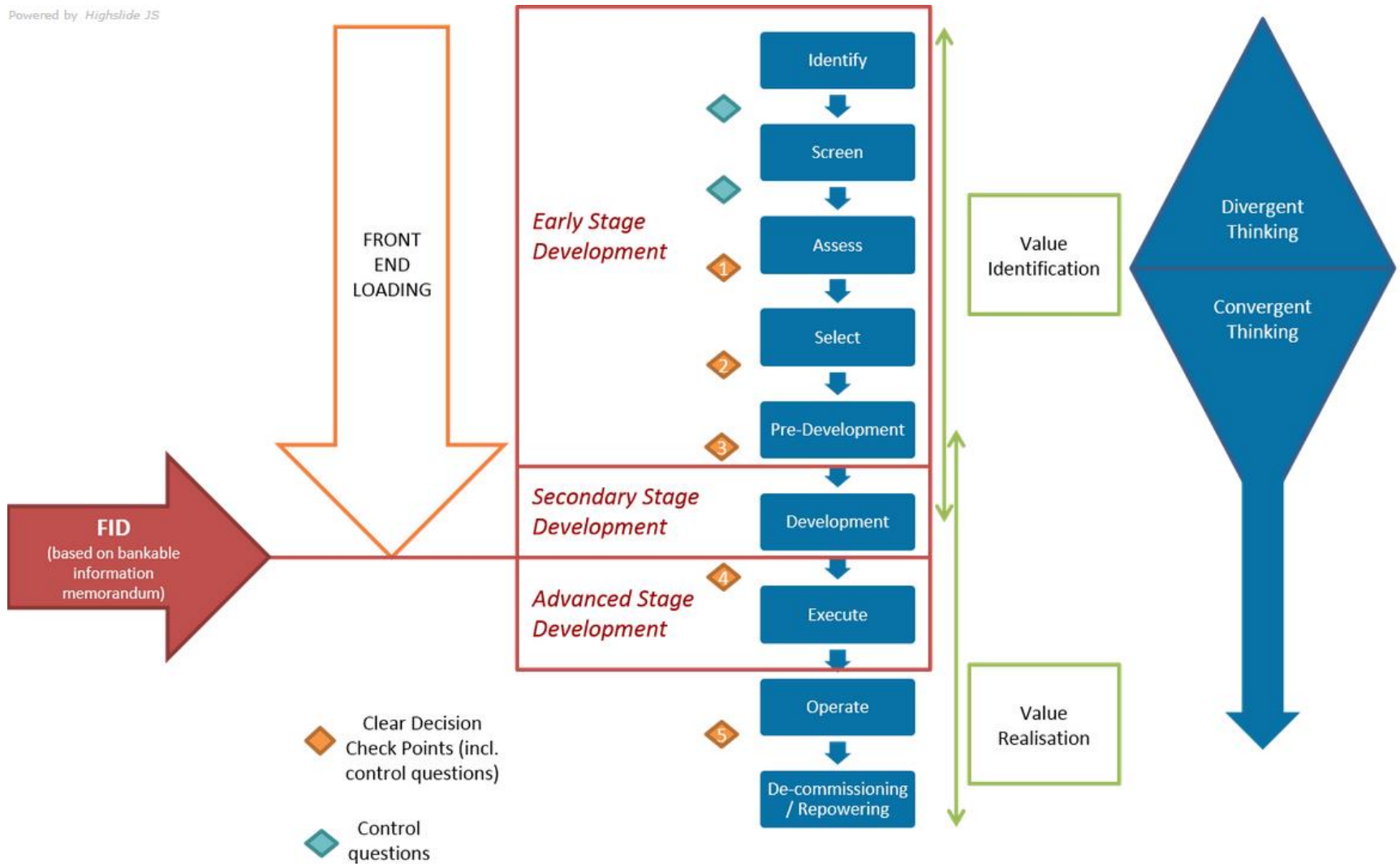
Create a project workspace

Financial Navigator

Find funding opportunities

Process Overview

Powered by Highslide JS



Content of the Project Development Guidelines

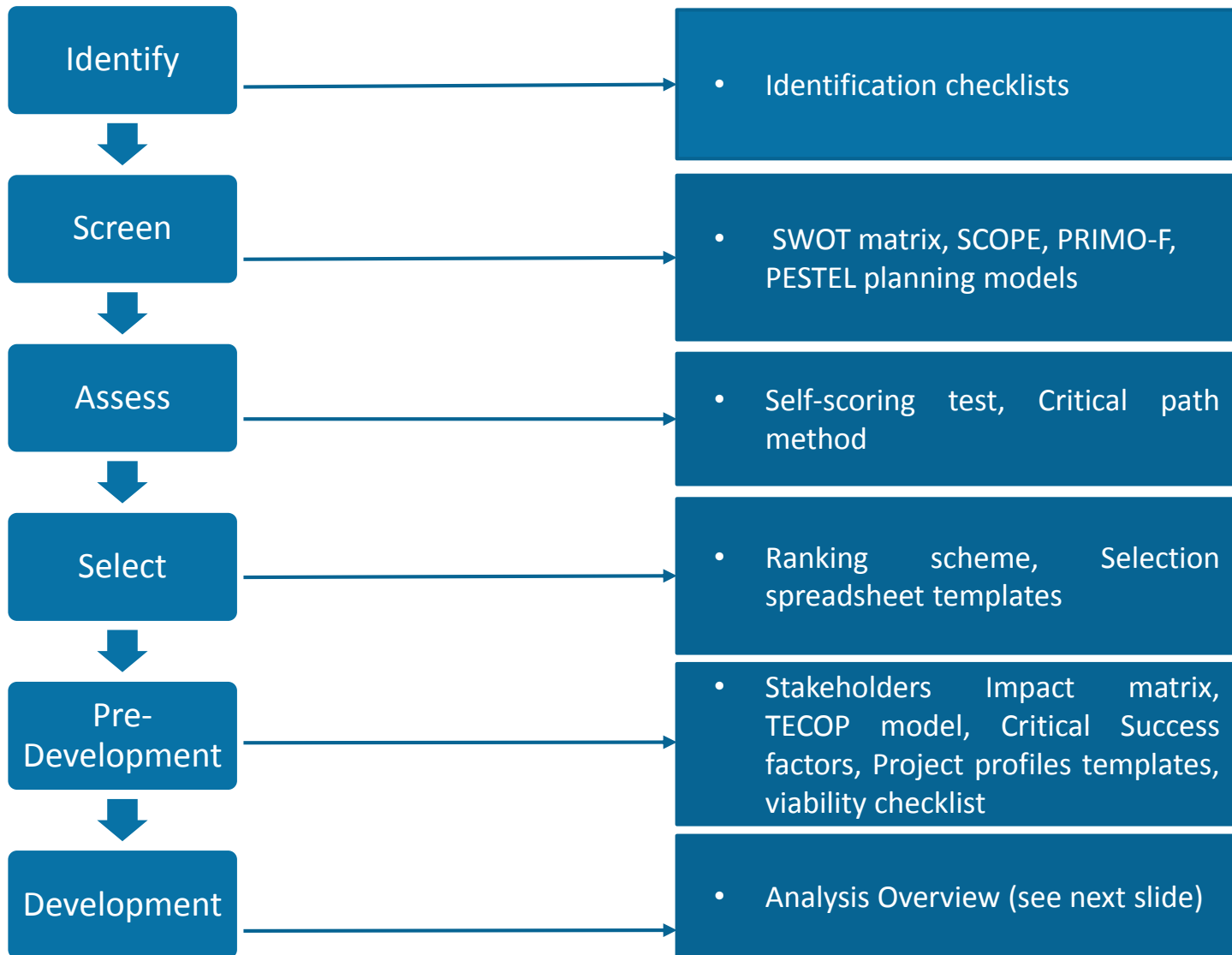
- Socio-economic
- Technical
- Legal and Commercial
- Organizational
- Political



Source:

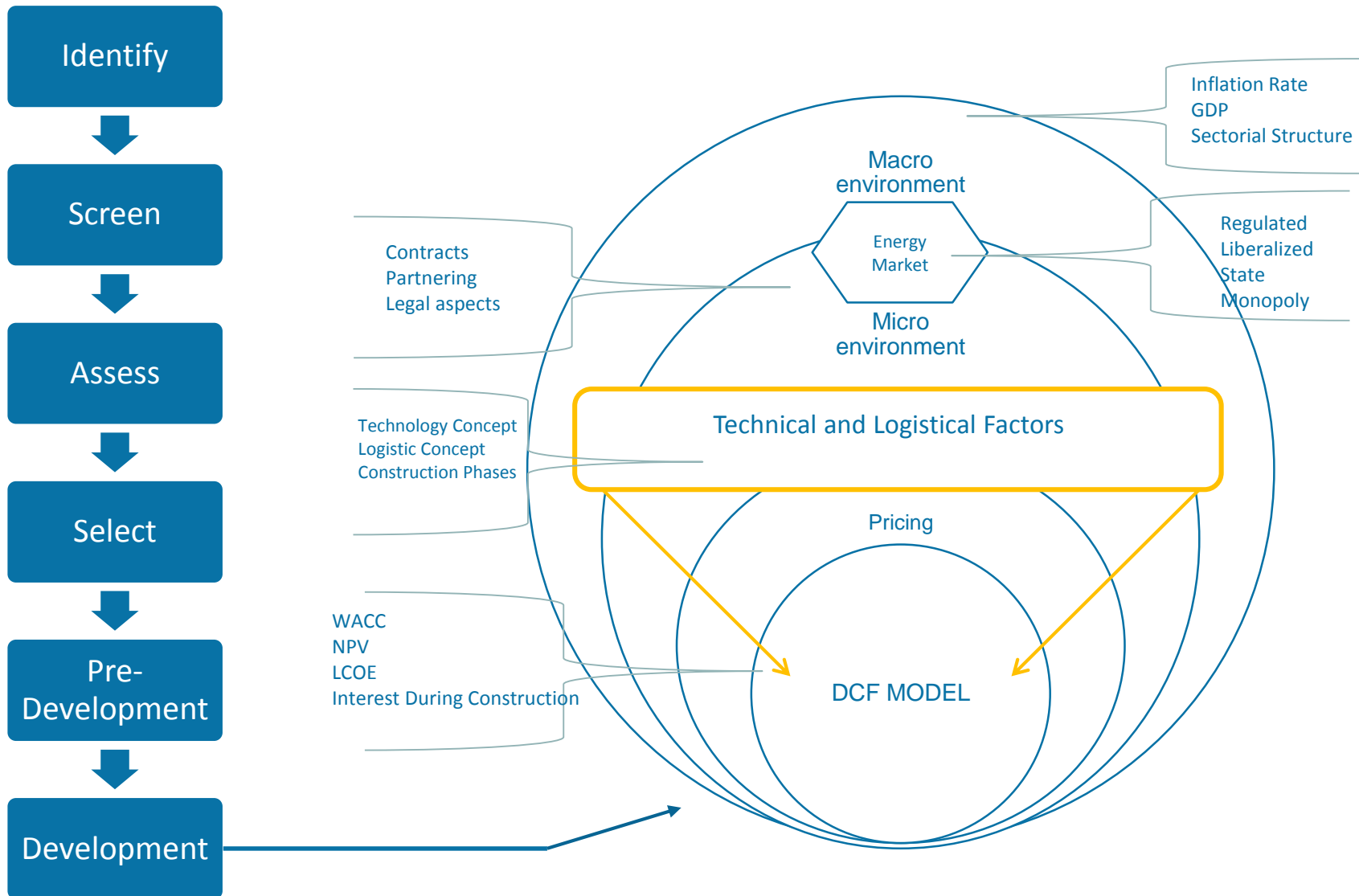
- [Pelamis Wave Power](http://www.pelamiswave.com/news/news/127/Pelamis-selected-for-1.4m-ETI-wave-power-project): <http://www.pelamiswave.com/news/news/127/Pelamis-selected-for-1.4m-ETI-wave-power-project>
- [Siemens](http://www.renewableenergyworld.com/rea/images/siemens-expands-solar-thermal-portfolio-with-solel-acquisition/50392): <http://www.renewableenergyworld.com/rea/images/siemens-expands-solar-thermal-portfolio-with-solel-acquisition/50392>
- [Torresol Energy Investments](http://www.torresolenergy.com/TORRESOL/home/en): <http://www.torresolenergy.com/TORRESOL/home/en>
- [SolarDown](http://solar-down.com.au/news/): <http://solar-down.com.au/news/>

Content of the Project Development Guidelines



Source: NREL

Content of the Project Development Guidelines

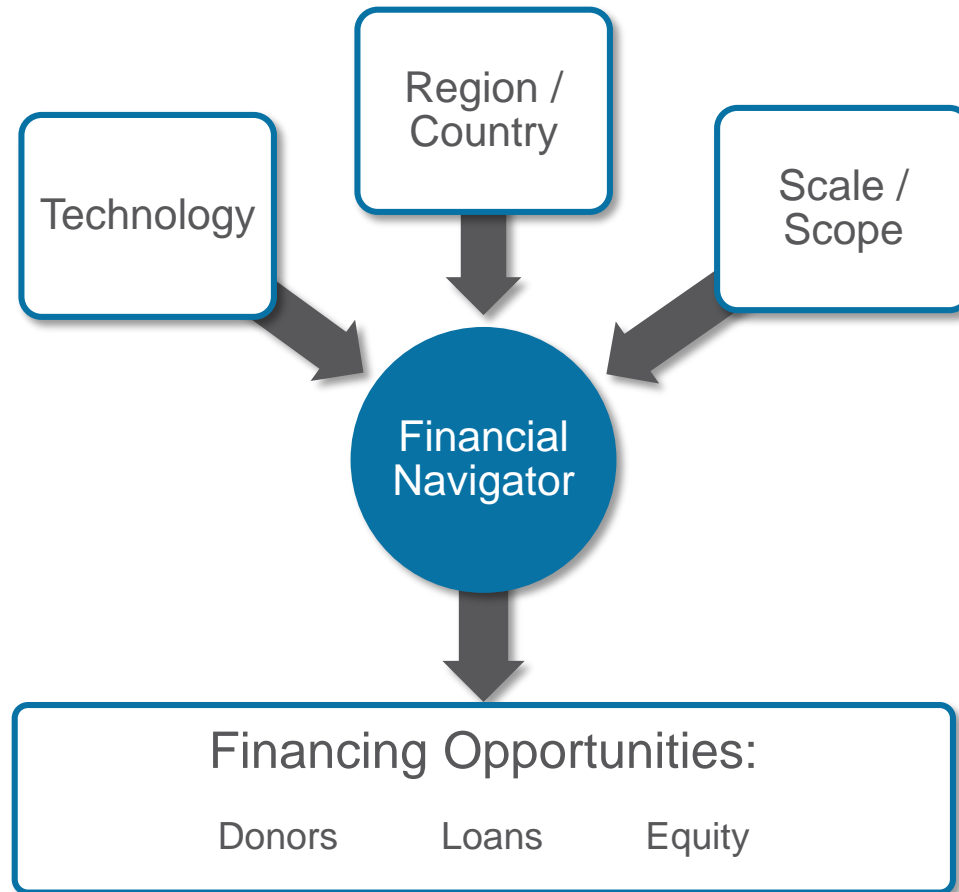


Contracts



- Definition
- How does the Agreement work?
- Benefits & Risks for the involved parties
- Structure
- Typical legal terms
 - Why are they part of the Agreement?
 - What is usually the content of each section?
- Templates/ Example contracts

Financial Navigator



Detail view of the funds (1)

Home > Financial Navigator > Funding details: ACP-EU Energy Facility

General information

Name of fund

ACP-EU Energy Facility

General description

The Energy Facility is a co-financing instrument which was established in 2005 in order to support projects on increasing access to sustainable and affordable energy services for the poor living in rural and peri-urban areas in African, Caribbean and Pacific (ACP) countries. Its objectives are set by the EU development agenda.






Geographical coverage

 Africa  Antigua and Barbuda  Bahamas  Barbados  Belize  Dominica  Dominican Republic  Grenada
 Haiti  Jamaica  Saint Kitts and Nevis  Saint Lucia  Saint Vincent and the Grenadines  Trinidad and Tobago
 Suriname  Fiji  Kiribati  Marshall Islands  Micronesia (Federated States of)  Nauru  Palau
 Papua New Guinea  Samoa  Solomon Islands  Tonga  Tuvalu  Vanuatu

Details on geographical coverage

All ACP countries

Technology coverage

 Solar power  Wind power  Geothermal power  Hydropower  Ocean Energy

Details on technology coverage

All renewables except biofuels. There is no limitation on technologies, as long as they contribute to the overall goals of the fund.

Type of fund

Grants only.

Size of grant

Maximum of 4-8 Million Euros.

Core funding information

Administering organisation(s)

European Commission

Funding organisation(s)

The budget for the infrastructure facility comes from the EDF (European Development Fund) to which EU 28 Member States contribute, some more than others.

Link

[Website](#)

Total fund size (M USD equivalent)

571

Comments on total fund size

N/A

Initial launch of the programme or fund

2005

Contact

Europeaid-energy-facility@ec.europa.eu

Reporting / example projects

<http://www.energyfacilitymonitoring.eu>

Detail view of the funds (2)

Funding requirements

Applicant requirements

ACP (Africa, Caribbean, Pacific) States and ACP/EU non-State actors. The latter includes NGOs, civil society, private sector organisations, communities and authorities, and public service bodies

Timframe

2005-open ended (last call closed in Feb 2014)

Target sector/group

Rural and semi urban populations. The main purpose of the facility is making modern energy accessible.

Grant characteristics (if applicable)

The grant can cover from 25-75% of total project costs. More details:
<https://webgate.ec.europa.eu/europeaid/online-services/index.cfm?ADSSChck=1384026594043&do=publi.getDoc&documentId=129456&pubID=133481>

Loan characteristics (if applicable)

Depends on target country and sector.

Equity characteristics (if applicable)

Characteristics depend on targeted country and sector.

Cofunding required?

Yes

Cofunding requirements

from 25-75% of total project costs

Activities financed

Construction and/or rehabilitation of energy infrastructure towards enhanced energy access in coherence with the local energy needs and context

Manner of funding

Various calls to which parties can apply directly.

Finance Technical assistance

Yes

Any other specifics

The project should allow at least 30,000 people to have access to modern energy. And this should be measurable.

Attachments

File name

[Template.docx](#)

**Thank you very
much for your
attention**

www.irena.org/navigator

