



Connecting distributed solar PV projects to the Clean Energy Certificate market in Mexico

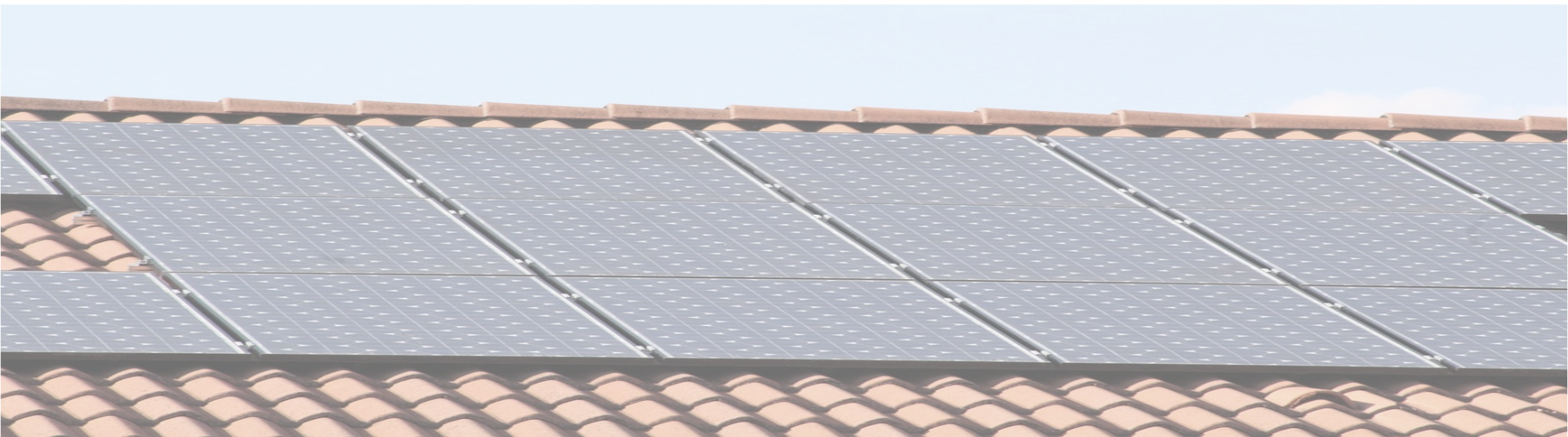
21 – 23 November 2018
Mexico City

IN A NUTSHELL

The lab of tomorrow fosters the development of new business-driven solutions for specific problems affecting developing and emerging countries. On behalf of the German Federal Government, the lab of tomorrow brings together international and local companies, customers and subject experts to collectively develop successful business ideas for solving development challenges.

THE CHALLENGE

The upcoming lab of tomorrow addresses the challenge: **"How might we generate business models that enable distributed solar PV projects to access the Clean Energy Certificate (CEL) market?"**



BACKGROUND

The **Energy Reform** as well as the **Energy Transition Law (LTE)** initiated by the Mexican government created an important foundation to increase the share of renewable energies in the energy matrix with the objective to meet the established clean energy targets (at least 35% of the generated electricity has to be clean by 2024 and 50% by 2050).

A major instrument in this reform is the creation of the Clean Energy Certificate (CEL) market which aims to promote the development and deployment of clean energy generating technologies. This system grants a CEL for each MWh of electricity produced by a generator using clean energy technologies. Suppliers and large users have the obligation to purchase an increasing amount of these certificates to cover their sales/consumption.

By the end of 2017, the installed capacity of distributed photovoltaic solar energy reached 434 MW and, according to the most optimistic projections, it can reach 6 GW by 2024 (ASOLMEX 2018). The market has particularly grown in the non-subsidized tariff segment, but economic viability is much lower in the subsidized segment (mainly residential). This subsidized segment could benefit largely from additional income that could be generated from the sale of CELs.



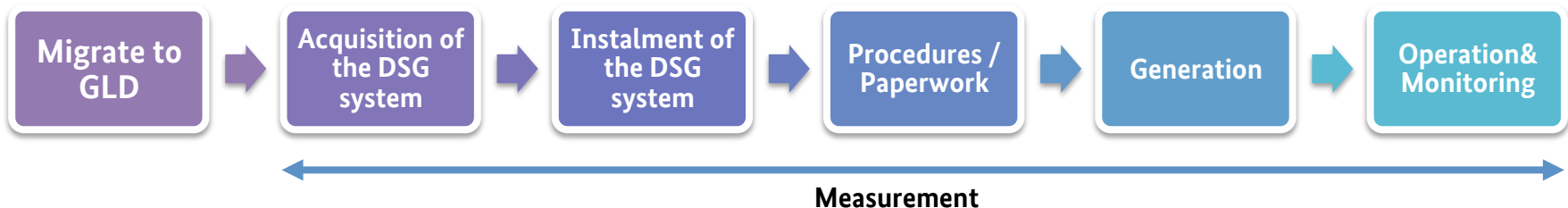
THE PROBLEM



Large generators are already benefiting from additional income from the sale of CELs. Although the Mexican legislation also allows distributed clean generators to obtain and sell their CELs in Wholesale Electricity Market (MEM) - where they have to be represented by their energy supplier (basic or qualified) - in practice there are no profitable business models that allow these small generators to receive and benefit from the income of these potential CELs.

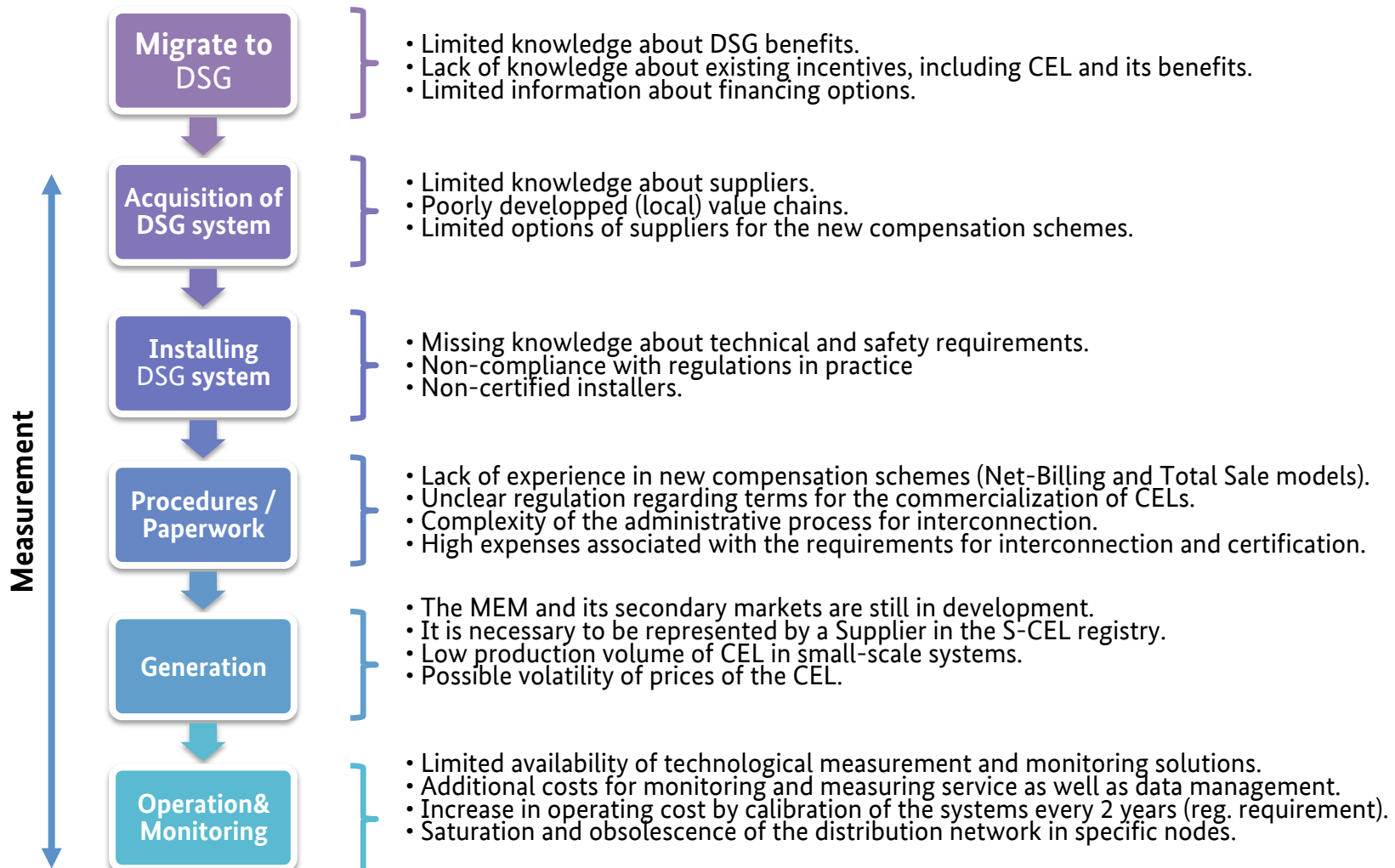
For a user (residential or commercial) with a Distributed Solar Generation (DSG) system, benefiting from the commercialization of CEL involves going through different processes that go from the acquisition of a solar photovoltaic system, to the operation and maintenance of the system that generates clean electrical energy and hence to receive the CEL. Each of these processes involves overcoming various barriers that involve lack of information, uncertainty about the market, complexity of the administrative process, high technical requirements and the cost/benefit ratio of participating in this market, among others. Measuring the generation for it to be accredited is a transversal element linked to all, but the first step, in the process.

SIMPLIFIED MAP OF THE CEL ACCREDITATION PROCESS FOR THE DSG



BARRIERS AND MAIN CHALLENGES

During the process of CEL accreditation for the DSG the user faces different barriers:

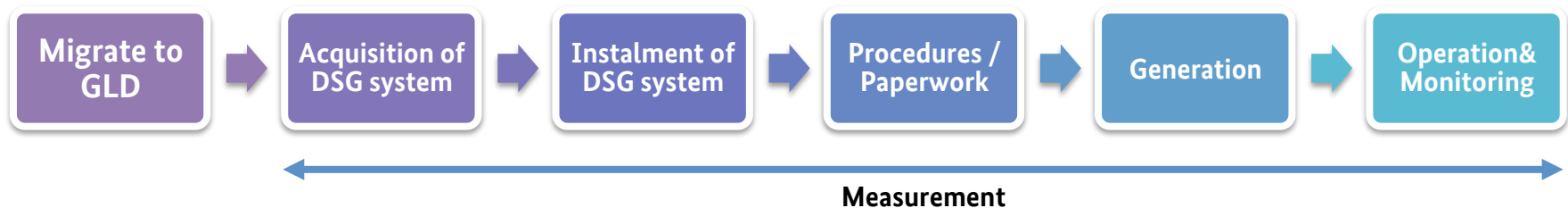


OPPORTUNITIES

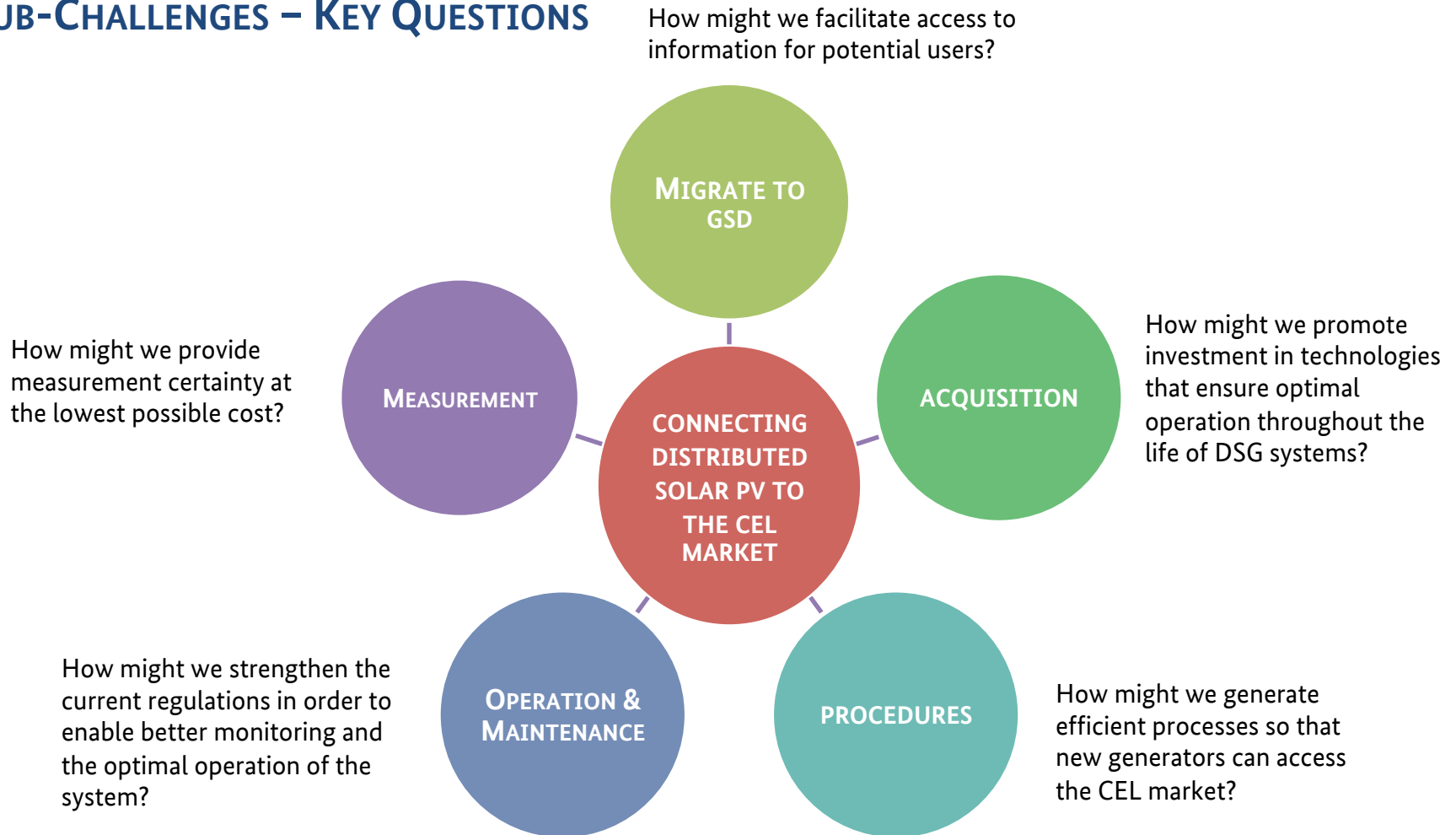
The barriers identified in the last stages of the simplified process map, represent great opportunities to develop solutions or business models that allow DSG projects to access the CEL market, to increase profits and to boost their growth. This should result in an accelerated growth of distributed photovoltaic systems in Mexico.

Likewise, it represents opportunities for new commercial interactions between different market participants, encouraging national and international companies to develop products and services specific to the national context, and incorporating CELs as part of their business models (component that can trigger the development of new services in different links of the DSG value chain).

SIMPLIFIED MAP OF THE CEL ACCREDITATION PROCESS FOR THE DSG



SUB-CHALLENGES – KEY QUESTIONS



POSSIBLE SOLUTIONS

An innovative metering solution

A clear and easy process established in a regulatory framework to award CEL

Establish specific requirements for contracts with the suppliers

A bundled selling system for certificates from different producers

A regulatory framework that enables distributed solar PV projects to offer capacity and auxiliary services to the power market

Better communication strategies on DSG for users to learn about the benefits of CEL

A virtual market (digital platform) space for Clean Energy Certificates

Provide new services through complementary technologies (energy storage) in DSG systems

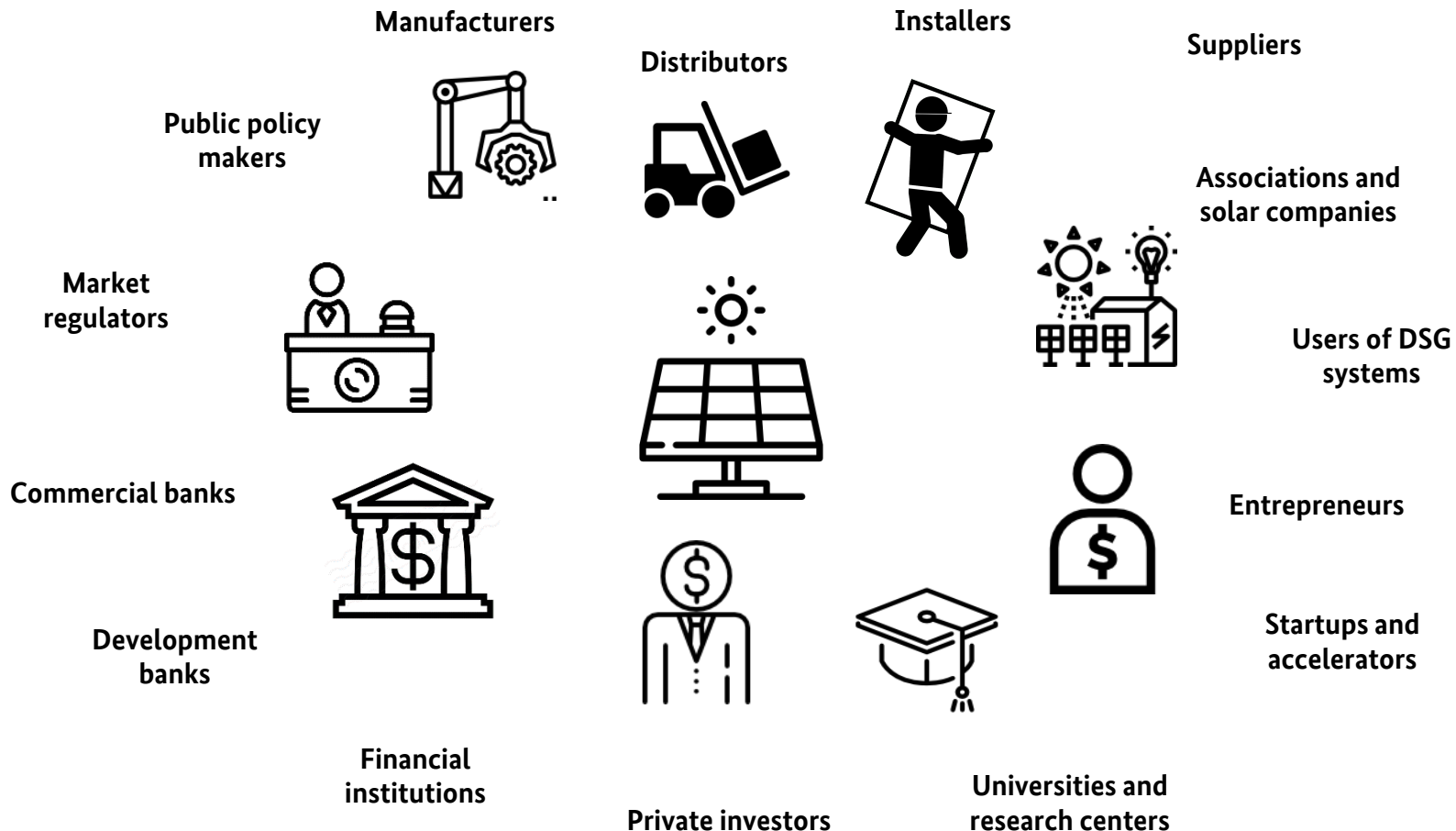
Conglomeration of small-scale DSG systems for CEL management and offer related services

Create a platform with clear and accessible information about service providers for DSG

Integrators with services that incorporate the sale of CEL in their financial models

Best practices in installation, O&M, considering the incorporation of CEL in financial models

EXAMPLES OF KEY STAKEHOLDERS WHO CAN CONTRIBUTE TO SOLVING THIS CHALLENGE



HOW DOES IT WORK?

Note: Until now, the upcoming lab of tomorrow includes the first 3 phases



KEY BENEFITS FOR YOUR BUSINESS

- ✓ **IDENTIFY** new business opportunities through in-depth analyses
- ✓ **EXPLORE** a new market and develop a promising business case
- ✓ **RECEIVE** further support when testing your ideas in Mexico
- ✓ **MEET** local and international experts, relevant decision makers and potential customers
- ✓ **COLLABORATE** with other entrepreneurs and find new business partners



GLOBAL CONTEXT

The challenge of accelerating the energy transition through Clean Energy Certificates is not a local phenomenon. In fact, the Sustainable Development Goals (SDGs) 7 and 13 seek to guarantee **access to affordable, reliable, sustainable and modern energy, and take urgent measures to combat climate change and its impacts by 2030.**

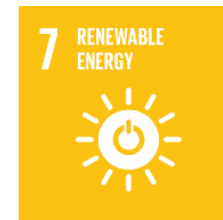
13% of the world population still lacks access to modern electricity.

From 1880 to 2012, the average global temperature increased by 0.85 ° C.

SDG 7 seeks to guarantee universal access to affordable, reliable and modern energy services by 2030.

SDG 13 seeks to strengthen the capacity for resilience and adaptation to hazards related to climate and natural disasters in all countries by 2030.

SUSTAINABLE DEVELOPMENT GOALS



Ensuring access to affordable and sustainable energy while tackling climate change is the basis for improving people's lives and sustainable development.

Join the lab of tomorrow and contribute directly to reaching the UN Sustainable Development Goals!

APPLICATION

If you want to participate in the lab of tomorrow, register on the following link! (limited availability)

<https://goo.gl/forms/WknbpCpqvmhpRp0T2>

If you have any questions regarding the upcoming lab, please don't hesitate to contact us. For more information visit our homepage:

www.lab-of-tomorrow.com



KICK-OFF: INNOVATION WORKSHOP

Date: 21-23 November 2018

Location: Mexico City

Offer:

- ✓ Three-day design thinking workshop
- ✓ Professional coaching

CONTACT

Arno van den Bos

arno.vandenbos@giz.de