Colombia-Israel Cleantech Pilot Program 2020-21

Deadline for submissions: March 21st, 2021

The *Israel Innovation Authority* (IIA) and *Innpulsa Colombia* (Innpulsa) invite interested Israeli companies to submit applications to **pilot cleantech-related technology solutions** with Bancolombia, Celsia, Ecopetrol, EPM and ISA.

Innpulsa and the IIA are seeking to advance cleantech by helping Israeli companies get the evidence and assistance they need to fine-tune their development and to enter and be successful in the market.

Bancolombia, Celsia, Ecopetrol, EPM and ISA would serve as a real-world living laboratory for the Israeli companies to test and improve a process, service, or product.

The goal of this collaboration is to accelerate the availability of cleantech innovations to the public, introduce Israeli cleantech technology to Colombian industries, and advance the development and deployment of discoveries for the benefit of the world**.**

The **IIA** provides resources to aid technology advancement for Israeli companies.

- **Bancolombia** provides a qualified team of sustainability experts, technical experience developing worldwide suppliers and after-sales services, also technical experience with low and ultra-low emissions vehicles, sustainable logistics models, including needed infrastructure, facilities to test logistics models in our mobility Lab Transportempo.
- **Celsia** will provide a team of engineers and a financial advisor to identify potential technology suppliers and to sign a consultancy agreement to pre-dimension the project. This team goal is to design the project in detail and to decide on technology providers to be able to start its construction and make it fully operative in 2022.
- **Ecopetrol's** Energy Management and Innovation Digital Studio Teams participate in the activities of this program led by Innpulsa and the IIA and could provide qualified personnel, physical units for pilot locations and technical experience. All this within the framework of its operations.
- **EPM** provides qualified personnel, physical units for pilot locations, technical experience with clients in connected or isolated areas, water quality laboratories, and other facilities for laboratory tests for materials, meters, equipment and instrumentation for all the different lines of work described.
- **ISA** provides a group of experts that will analyze the proposed solutions to the innovation challenges. In the case of a successful application, both parties will sign an agreement with the intention to explore the possible solution in detail.

Bancolombia is interested in Hydrogen Storage for sustainable mobility in the cargo and personal sectors:

- **Hydrogen - Fuel cells vehicles:** Development of the vehicle model adapted to the logistics needs of Colombian companies, topographic and geographic conditions and ensuring after-sales service
- **Hydrogen - Fuel cells storage:** Ensure the supply of hydrogen and the necessary infrastructure for it
- **Green Economy:** Ensure that the economic model is competitive against the traditional internal combustion model

Celsia is interested in Green Hydrogen and Hydrogen Storage, especially in the following areas:

- **Green hydrogen** - To design, dimension, install and operate a full-plant for green hydrogen production via electrolysis of water - The source of electricity will be a 10 MWp solar farm.
- **Hydrogen storage -** The hydrogen produced will be compressed and stored in high-pressure tanks for the subsequent refueling of different kinds of vehicle fleets (freight and passenger).

Ecopetrol is interested in promoting innovative cutting edge technological solutions while addressing relevant business challenges with a sustainable and digital approach include Renewable energies, CC&S and carbon management, Digital for energy efficiency, Hydrogen - Fuel cells (hydrogen/methane), especially in the following areas:

- **Renewable energies**
    - Power Storage
    - Wind Power
    - Solar Power
    - Geothermal Power
    - Conventional power with hydrogen mix
- **CC&S and carbon management**
    - Greenhouse Gas emissions
- **Digital for energy efficiency**
    - Energy Efficiency
- **Hydrogen - Fuel cells (hydrogen/methane)**
    - Hydrogen Systems
    - Hydrogen use
    - Hydrogen Storage

<u>EPM</u> is interested in distributed Energy Resources, Solid Waste, Drinking Water and Wastewater; different from the conventional centralized approach and oriented to the construction of long-term sustainable business models in the following areas:

- **DER Distributed Energy resources-** Propose technical solutions for distributed electric energy supply, which must be different, sustainable, clean and adaptable. The solutions must be applicable to non-connected or isolated zones. The proposals could include the optimal usage and integration of the different energy sources available.
- **Solid waste** - Propose technical solutions for integrated solid waste management in urban or rural areas with limitations in storage and collection processes. The main focus is on small-scale systems, and the main challenge is to develop sustainable and cost-effective solutions for solid waste management.
- **Drinking water and wastewater** - Propose technical water management solutions for distributed systems in remote and urban areas difficult to reach with centralized infrastructure. Automatization and remote control are important requirements to be integrated. Develop in the case of wastewater management, different treatment technologies and include partial or total water reuse when applicable. For drinking water treatment, different technologies and several raw water sources can be considered (surface, underground, rain, brackish, seawater).

<u>ISA</u> is interested in new materials to develop green overhead transmission lines, especially in the following areas:

- **New foundations** (lighter, corrosion-resistant, modular, water-efficient, etc.) for overhead transmission line towers.
- **New materials for the construction** of overhead transmission lines (lighter, corrosion-resistant, modular, water-efficient, etc.), or materials used in other industries that can be applied to build the towers.
- **New coatings** (corrosion-resistant) for overhead transmission line towers.
- **Technologies for hydrogen transportation**. Efficient technologies for large scale hydrogen transport. Focus on improving full cycle efficiency.
- **Application of hydrogen for long term energy storage**. Focus on improving full cycle efficiency. Methods for cost/benefit analysis of hydrogen storage versus competing technologies.
- **Distributed generation based on biomass.** Reduced footprint solutions and modular designs. Design of streamlined processes for biomass plant operation with minimal human support.

Supported activities may include piloting, testing (of different kinds; including in real-world conditions), validation, performance verification, device iteration, product and interface customization, pre-pilot activities, R&D activities needed for the pilot, identifying the parameters of the product/technology and potential use cases, optimizing user interfaces, support and assistance to develop business models for the selected lines of work and technologies, etc.

Support Offered

Successful Israeli applicant companies will receive funding from the IIA and in-kind services from the Colombian corporations.

The IIA would support approved R&D performing companies, registered and operating in Israel, with a grant of up to 50% of the approved Pilot Expenses Budget, according to its regulations and procedures.

When a project eventually results in sales of a product, service, or process, the financial support must be repaid by the Israeli companies in royalties to the *Israel Innovation Authority* according to its regulations. In general, royalties are paid at rates beginning at 3% of sales, depending on various criteria. Royalties are payable until 100% of the amount of the grant has been repaid with interest as provided in the applicable regulations. If the project does not result in sales, no repayment is required.

Bancolombia, Celsia, Ecopetrol*, EPM and ISA may cooperate with Israeli companies within the framework of this program led by Innpulsa and the IIA and could provide in-kind services, expertise, and/or use of facilities. Examples for such in-kind support can include:

- Usage of unique facilities for beta-sites operations;
- Access to real-field-conditions for the tested innovation;
- Usage of internal services, expertise, knowledge, or equipment;
- Access to unique data, data-sets, engines, devices, skills;
- Experts' and consultants' time to guide, co-develop and, identify the parameters of the product/technology for testing or potential use cases;
- Assistance in co-commercializing the product; for example, through joint work with relevant local business partners (companies, investors, distributors, etc.) that are part of the Colombian corporation's network.

An appropriate agreement between successful applicant companies and the Colombian corporations will need to be signed before project initiation and/or whenever the latter so requires.

*Ecopetrol retains all rights and properties and does not transfer any license to third parties unless agreed upon in writing. Any agreement (related to or arising from this initiative) shall be subject to completing the procurement process at Ecopetrol and shall be authorized in writing by an authorized representative thereof. Ecopetrol’s

participation in this initiative does not create any partnership, joint venture, or any other relationship whatsoever with the organizers of the initiative and/or with *Innpulsa* and/or with any third party taking part in the scouting process.

Process and Timeline

Before submitting a project proposal to the IIA, the Israeli companies must contact the Colombian corporation with which they are interested to collaborate. The contact information appears below.

After approval from the partner organization, Israeli companies are invited to submit a project's funding request to the Israel Innovation Authority **by March 21st, 2020, at noon (IL time)**.

A signed Letter of Intent (LOI) proving the planned collaboration between the Israeli company and its Colombian partner is required.

For more details and the application form, click here.

Timeline

Call for Proposals Launch	November 16th, 2020
IIA Application Submission **Deadline**	March 21st, 2021
Notification of IIA and Innpulsa Decision	~ June-July 2021
Agreement Signing and Submission to the IIA	~ August 2021
Project Launching	~ September 2021

Contacts

Israel Innovation Authority
Alan Hofman
Latin America Collaborations Director, International Collaboration Division
EM@innovationisrael.org.il
Tel: +972-3-7157987

BANCOLOMBIA
Beatriz Ocampo Vélez, Sustainability manager
bocampo@bancolombia.com.co

Laura Franco Bermúdez, Sustainability chief
lfrancob@rentingcolombia.com

Alejandro Ossaba Restrepo, Sustainability specialist
aossaba@bancolombia.com.co

Juan David Pérez Giraldo, Engineering specialist
jdperez@rentingcolombia.com

Celsia
Juan M. Alzate, CIO
jalzatev@celsia.com

Jorge I. Montoya, Engineer in charge of the project
jimontoya@celsia.com

Ecopetrol
Energy
Roger Mina, Head of the Energy Planning Department, Energy Management
roger.mina@ecopetrol.com.co

Digital
Andrea Tapias, Digital Innovation Studio Lead
andrea.tapias@ecopetrol.com.co

EPM
Distributed systems – Drinking water and wastewater
Andrés Alfonso Martínez, Innovation and Development Management
andres.alfonso@epm.com.co

Distributed systems – Energy
Pedro Alejandro Eusse Bernal, Innovation and Development Management
Pedro.Eusse@epm.com.co

Distributed systems – Solid waste
Carol Ximena Ruiz Gómez, Innovation and Development Management
CAROL.RUIZ@epm.com.co

ISA
Olga Patricia Castaño, Strategy
opcastano@ISA.com.co

Pedro Lozada, Innovation
plozada@ISA.com.co