INTERNATIONAL CALL FOR:
Chilean Clean Technologies Institute

Technological Institute for solar energy, low emission mining and advanced materials of lithium and other minerals

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Why..?
... Historically we have depended on the exploitation of Natural Resources ...
Exportation of saltpeter at the end of the 19th century
Fruit export rush in the 80's: Chile, leader in exports from the southern hemisphere
Chile as the main copper exporter in the world ...
We are leading the global lithium production.

We concentrate about 50% of the world reserves.
We want to export mining services and added value...
Not only minerals
We need to move towards an economy...

more *diversificated and sophisticated*, with lower export vulnerability

*which generates a virtuous circle* between innovation and investment in human capital...

*with higher degrees of social and territorial inclusion,* and...

*environmentally sustainable* from a local and global perspective.
A UNIQUE OPPORTUNITY

Atacama Desert singularities...

- Highest solar potential
  - >3.500 kWh/m2
  - >3.000 sun hours/year
- Biggest metallic mining district in the world
- Strong position in non-metallic mining

...Opportunities for Chile

- **Global trend**: exponential growth of electro mobility and hydrogen-based economy
- At 2030 there will be 20-40 millions of electrical vehicles.
- Future needs: 2 - 4 millions tons of low emission Copper (10-20% of world Production).
Chilean Mining Sustainability Challenges

**World's leading lithium producer**
- Long term supply of lithium carbonate/hydroxide (battery grade)
- Lithium added value products (cathodes, others)

**World's largest low emission copper producer**
- Solar energy for continuous electricity supply (mix PV/CSP) at average cost of 50 USD/MWh
- Fossil fuels substitution
- Hydrogen and Synthetic fuels based on circular economy approach

**Added Value and Industry development**
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www.corfo.cl/sites/cpp/convocatorias/instituto_tecnologico_de_energia_solar

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Two steps process

RFI Stage
(Request for information)

RFP Stage
(Request for proposals)

Call for RFI
26/11/2018

Close of RFI
26/11/2018

Call for RFP
24/06/2019

Close of RFP
23/10/2019
The Technological Institute seeks to achieve:

Research and industrial technological development;

Provision of technological services;

Development and strengthening of human capital;

Diffusion and extension

Promotion of entrepreneurship and technology-based innovation.

- Development of new materials and innovations that add value to lithium...
- Development of photovoltaic solar and concentration energy technologies adapted to extreme desert climates...
- Development and transfer of a set of technologies to the national mining industry, helping to reach emissions reduction targets by 2030.
- Training of at least 100 highly qualified professionals, in collaboration with the academic sector and trade associations...
- Support of at least 100 business ideas and/or startups related to the areas of action of the Institute...
The three areas defined for the purposes of this call are...

**Solar Energy**
- Solar electricity and storage technologies.
- Development and integration of solar fuels.
- Innovations to integrate solar heat in mining and industrial processes.
- Desalination and water treatment using technologies.

**Low emission mining**
- Energy sustainability in metal mining, with a circular economy approach.
- New low emissions mining-metallurgical processes.
- Innovations for the traceability of greenhouse gases emissions.
- Innovations for the sustainability of the Chilean non-metallic mining industry.

**Advanced materials of lithium**
- Innovations in advanced materials based on lithium, salts and other strategic minerals.
- Development of technologies to more efficiently extract and concentrate scarce products used in batteries and storage, such as cobalt.
Subsidy
Up to USD 193,485,024 over a period of 10 years.

With a minimum of 30% of private co-financing.

Participants:
- Non-profit legal entity
- They must contemplate an entity of regional character or with domicile in the region of Antofagasta, among the associates.
- They must have representation universities and / or organs of the Administration of the State of Chile.
The Institute should have an infrastructure that allows, at least, technology test sites (testbench), industrial pilot plants and laboratories for applied research.
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