

## Presentation of the Agrodelsol project

The Agrodelsol project has been conceived, from its inception, as a contribution to the global agroecological and energy transitions and is initially aimed at the coastal zones of Chile, Peru and Baja California.

Agrodelsol proposes a territorial management solution and consists of the extension of the agricultural frontier thanks to the desalination of seawater using renewable energy sources, organising irrigation circuits thus converting desert zones into agricultural production lands. The social impact of the project is attained through the exploitation of these lands by cooperatives and/or private companies employing local labour established under the tutelage and promotion of the local public authority. Drinking water will also be provided for the needs of the cooperative or the private company workers.

Agrodelsol is more than just an "Irrigation-as-a-Service" (or IaaS) solution as it has a high-impact social content and includes the final part of the agricultural value chain : securing the markets for the sale of the agricultural product.

Schematically, the project has the following areas of activity:

- electricity generation from solar panels, with necessary backup of batteries for specific uses.
- a micro grid, independent from the interconnected national grid
- desalination of seawater, including water intake, pumps, storage tanks. Desalination system either by reverse osmosis, either by electrodialysis and/or combined with other methods such as air condensation capture
- system of drip irrigation, including pumping stations, irrigation circuitry, laboratory, fluid preparation station, intelligent irrigation by inclusion of real-time weather conditions and nature and state of crops in the preparation of irrigation water
- agricultural production itself, including electric tractors, tools and bogies. The "zero-carbon" certification of the agricultural production is part of this scope
- sale of the agricultural production, either at local or national or international level, according to the crops chosen as most suitable for the quality of soil

The stages of the project are as follows:

- identification of the public authority that accepts to lodge the initiative by providing support and the necessary land
- creation of an Agrodelsol Development Company specific for the pilot project
- signing of a development agreement between Agrodelsol Development Company and the public authority
- search for donor funding to carry out the pre-feasibility studies of the pilot project
- pre-feasibility studies leading to a more precise definition of the pilot project
- search for financing to carry out the feasibility studies, ideally funding would come from impact funds and/or development funds
- feasibility studies, including the studies on soil characteristics, its agricultural potential, selection of the most suitable crop, socio-economic-environmental impact and evaluation of possible sale channels
- search for funds for the final development
- final development, including detailed studies of the technical part, construction contract(s), operation aspects, long-term financing, socioeconomic programmes, environmental license and programmes, cooperative or private company formation plan, marketing plan and

identification of buyer(s) of the agricultural product and sale conditions, terms of long-term irrigation water services purchase agreement between Agrodelsol Development Company and the cooperative or private company, terms of land lease between local public authority and ultimate beneficiary, the cooperative or private company

- selection through competitive bidding of contractor(s) and operator
- search for long-term debt financing for pilot project implementation
- search for long-term equity investor
- signature of all agreements
- securing all necessary authorisations; licenses and permits
- financial close
- sale of Agrodelsol Development Company shares to the long-term equity investor
- entry into force of the land lease agreement
- construction phase
- commissioning phase
- operation phase (15 to 25 years) under an operation and maintenance agreement between Agrodelsol Development Company and an experienced operator with respect to the power and desalination assets, and under a sale of irrigation water services between Agrodelsol Development Company and the ultimate beneficiary, cooperative or private company. The ultimate beneficiary is responsible for production and sale of agricultural product

It is estimated that three years will be taken between the early stages of the project and the commencement of construction, which can last between 12 and 18 months.

Agrodelsol, as an integrated project, will always be a bespoke system, designed specifically for each situation and that will have enough digital intelligence at all stages: design, construction, operation and sales to be able to actively monitor and follow up, on real time and from any location, all operational parameters, including power generation, water desalination, irrigation information and agricultural production.

The next step, following the successful implementation of the pilot project, is to rapidly scale-up the Agrodelsol solution.

The economic fundamentals of this venture are robust:

- low prices for solar panels
- low prices for desalination units
- both solar panels and desalination units are modular
- "zero-carbon" agricultural production, which enable sales to benefit from premium prices if compared to similar but not zero-carbon product
- possibility of obtaining carbon credits

All aspects of the Agrodelsol solution are well-known and are, independently being practised at large scale worldwide. Because of this specific aspect, Agrodelsol can be considered to be ready to undertake its pilot project to achieve proof of concept.

Some figures

Target size for pilot project : 200 Ha

Annual irrigation water volume : 2 million m<sup>3</sup>

Cost of electricity : 25 USD/MWh (no need for converter or transmission line to main grid)

Cost of desalination : 3kWh/m<sup>3</sup>

Final cost of irrigation water : under 44 cents/m<sup>3</sup>  
Installed power generation capacity : 3 MW  
Total investment cost : around 9.8 MUSD

The above are all indicative figures and subject to confirmation to take account of the specific characteristics of the finally selected site for the pilot project.

### Agrodelsol Business Model

For Agrodelsol, in its role as developer, the business model is based on two sources of revenue : revenues from business development services and upon financial close, income from the sale of Agrodelsol Development Company shares to the long-term equity investor. The ultimate beneficiary, cooperative or private company, would, upon commissioning and start of commercial operations, assume the payment of the irrigation water services as per the long-term purchase agreement to the Agrodelsol Development Company. The ultimate beneficiary would have its incomes guaranteed by adequate sale contractual arrangements made prior to financial close regarding the agricultural production.

### Location of the pilot project

Agrodelsol has decided to work on the pilot project in Chile. At the time of writing this project summary document, discussions have been started with some municipalities in Chile and the part of the project company shareholders would be Chilean nationals.

### SDGs involved

SDG 8 : Decent work and economic growth  
SDG 13 : Climate action

### About the sponsor

HALLCROSS PARTNERS is an energy and infrastructure firm organised as a private limited company registered in the UK.

HALLCROSS PARTNERS is active in six specific areas :

- Dispute resolution : services of expert witness in arbitration, mediation services and dispute boarding services
- Advise to public entities (national governments, local governments, municipalities) on policy and regulatory adaptation to the energy transition
- Provision of business development, project development services in energy and infrastructure
- Organisation of seminars, training, conferences on the energy transition, sustainable development goals and Paris Agreement obligations
- Alternative investments in business opportunities brought by the energy transition
- Product development : implementation through tailor-made methodologies and frameworks of green development finance packages, socio-environmental programmes and sustainable territorial planning

Agrodelsol is a registered trademark in France's INPI (National Institute of Intellectual Property)

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