

RENEWABLE ENERGY IN ARGENTINA

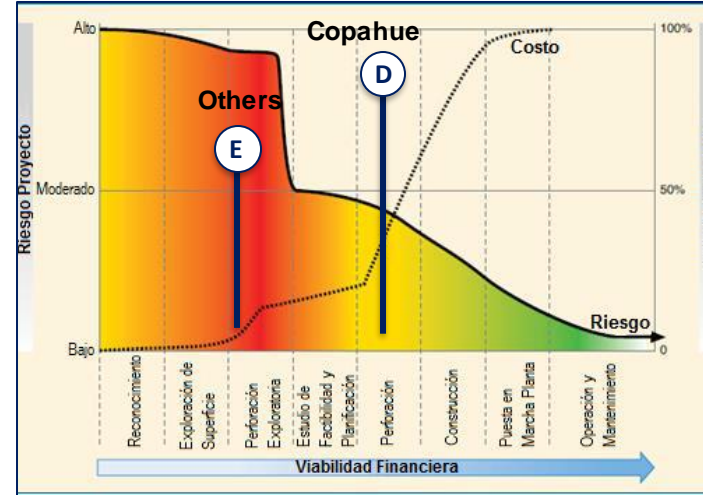
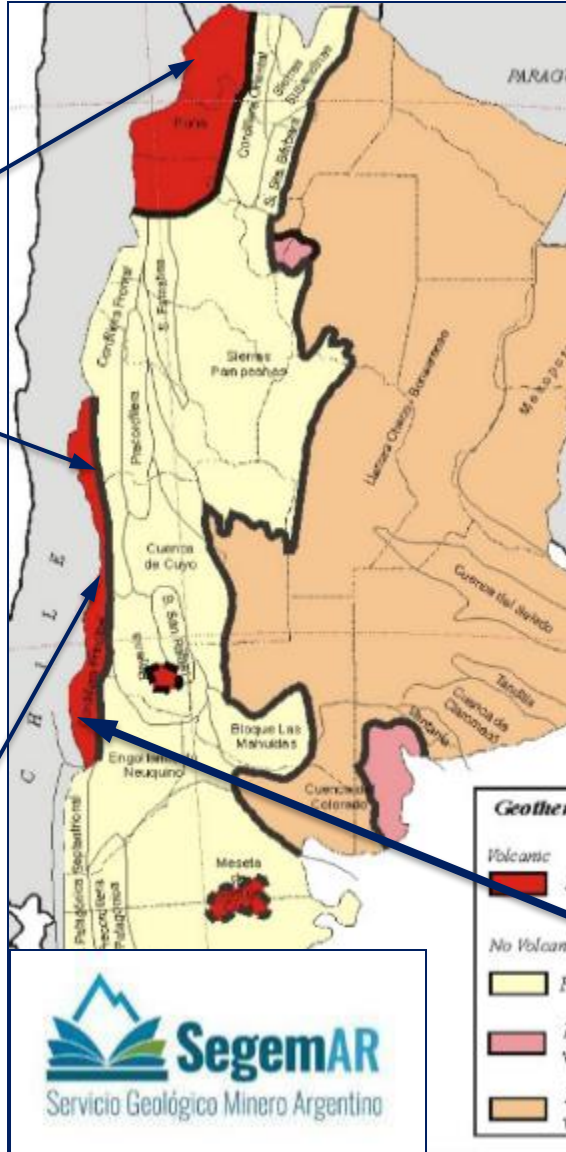
NATIONAL GEOTHERMAL PLAN

July 2019

Gaston SIROIT



GEOHERMAL IN ARGENTINA TODAY



Potential *
0,5 -2 GW
*Segemar: Estudio Geothermal Washington Association

INSTALADO

2025	30 MW
2035	100 MW

82 Sites identified
Over 18 explorations Site



Power	10 -> 30 MW
Transmission	132 KV
Tecnology	Dry Steam (250°C)
Construction	50 months
Concession	20 year.



PILARS

ASSESSING
POTENTIAL

FINDING
SYNERGIES

GLOBAL
AGREEMENT

FINANACIAL
&
ECONOMICS

CALL FOR
TENDER



Promote and facilitate
project development to
reach feasibility status

TARGET

1

Feasibility

2

Pre-feasibility

11

Advanced Exploration

4

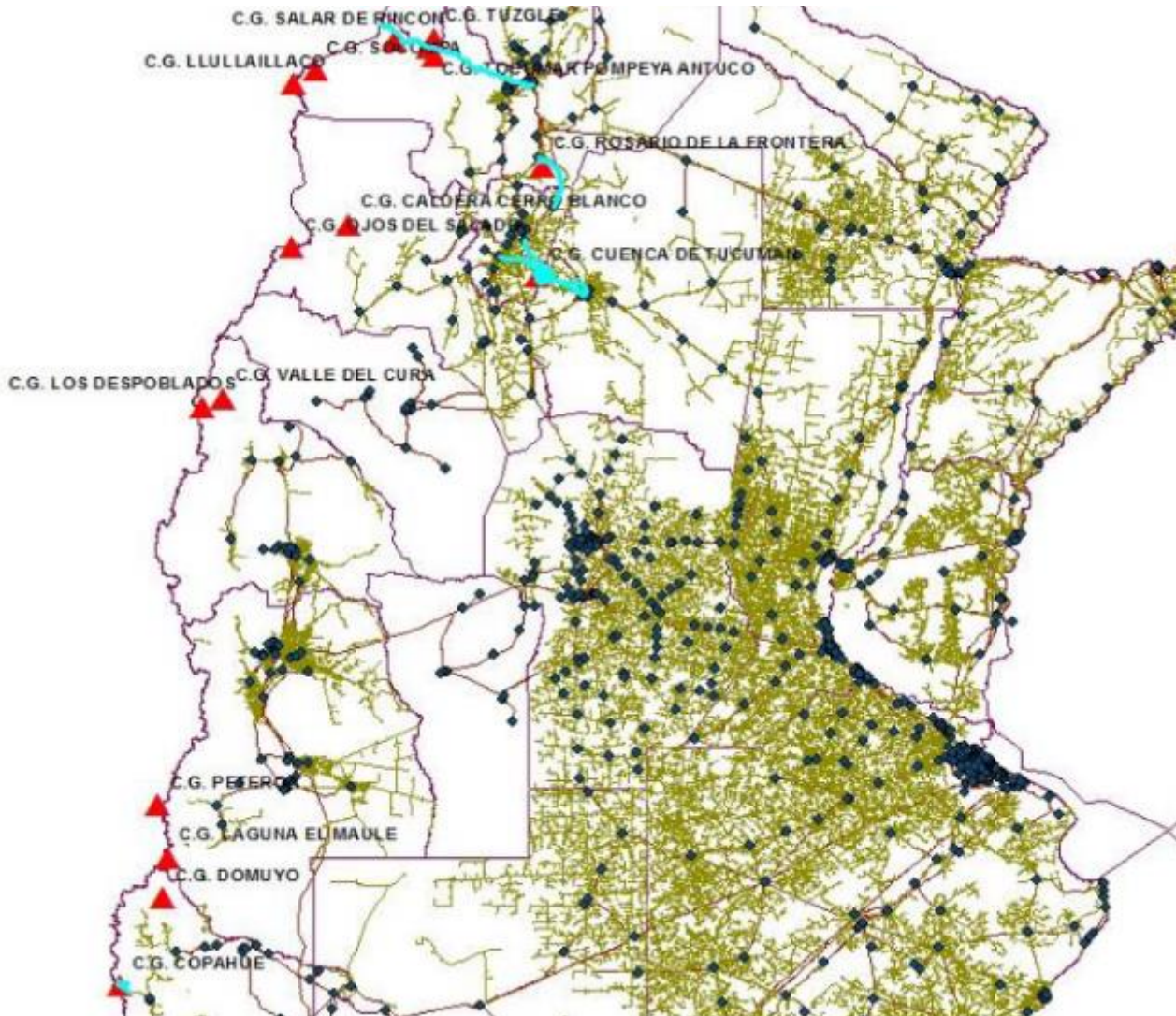
Exploration

82

Low / Medium Entalpy Sites



EXPLORATION SITES AND TRANSMISSION LINES LAYER



PROYECTO	PROVINCIA
C.G. COPAHUE	NEUQUEN
C.G. DOMUYO	NEUQUEN
C.G. SOCOMPA	SALTA
C.G. LOS DESPOBLADOS	SAN JUAN
C.G. PETEROA	MENDOZA
C.G. ROSARIO DE LA FRONTERA	SALTA
C.G. TOCOMAR POMPEYA ANTUCO	SALTA
C.G. LLULLAILACO	SALTA
C.G. TUZGLE	JUJUY
C.G. CALDERA CERRO BLANCO	CATAMARCA
C.G. VALLE DEL CURA	SAN JUAN
C.G. CUENCA DE TUCUMAN	TUCUMAN
C.G. SALAR DE RINCON	SALTA
C.G. OJOS DEL SALADO	CATAMARCA
C.G. LAGUNA EL MAULE	MENDOZA
C.G. CALDERA AGUAS CALIENTES-INCACHULE	SALTA
CONO PANIZO-QUEÑUAL-COYAHUAIMA	JUJUY
CALDERA CO. GALAN	CATAMARCA
TROMEN	NEUQUEN
LASTARRIA	CATAMARCA
ARACAR	SALTA

EXPLORATION

- Geochemical & sampling
- Geophysical (MT, Gravimetry), points of measurement
- Hydrogeological
- Geotechnical & Structural kinematic
- Modelling of the reservoir



DRILLING

- Targets based on number of Wells or length drilled
- Well testing and laboratory test
- Minerals alteration studies in drilling cores





Validate minimum criterias

HSE

- **Environmental Assessment for all stages**
Exploration, Drilling, Construction, Production
- **Social License**

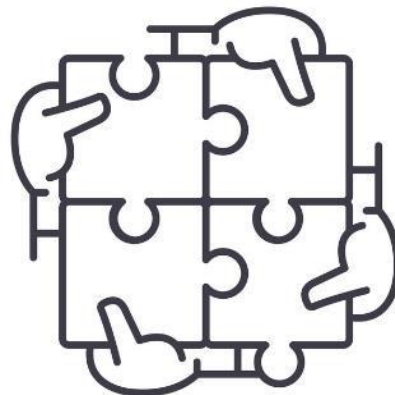
Technical requirements

- **Project status: Feasibility, Prefeasibility**
- **Call for Tender: Fixed / PPA Conditional**

LEGAL

- **Guarantees (COD)**
- **Concession contract**
- **Availability of real property**
- **Financial Partner (250 K\$ / MW)**
- **Technical Partner (MW of similar tech)**
- **Agreement with the Province**
- **Public holder of the Mining ownership**

- Synergy within Renewable Sector
 - Engineering, planning, financing
- Clear legal framework
 - RenovAr, bankable projects
- Technical agencies on board
 - Technical skills & support (SEGEMAR)
- Strong local content for the industry
 - Drilling rig, services Company, surface equipment's,
 - Steel piping, casing, tubing, steam management
- Large experience in Oil & Gas and Mining
 - Exploration (sismic, 2D, 3D, modelling)
 - Geological, geophysical and geotechnical studies





- Tender Copahue (30 MW)
- Generate a Global Data base for all geothermal sites
 - Validating the document structure and set of data
- Define the Technical baseline requirements for all qualified sites
- Formalize a National agreement with all stakeholders
- Define clear and achievable targets (resources, milestones, auctions, capacity)
- Explore the best financial structure to reach feasibility status for all sites



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