



**Seminar on the Joint Crediting Mechanism (JCM) Implementation in Chile
- Accelerating Promotion of Environmental Infrastructure through JCM -**

Intercontinental Hotel, Santiago Chile, August 19th 2019

JCM Project Model

Introduction of 1MW Rooftop Solar Power system to University



UNIVERSIDAD TECNICA
FEDERICO SANTA MARIA



PV power (kWp)	992
Inverter power (kW AC)	974
HIT 325 Modules	3.054
Annual Electricity (MWh)	1.628
Emission Factor (tCO ₂ /MWh)	0,314
Expected GHG Emission Reductions (tCO ₂ /yr)	511

19.7% module efficiency

Panasonic

More energy, higher profit!
Helping you reach a higher final profit with your PV system!

approx. 8% more

773.9 kWh/kWp	Standard
839.2 kWh/kWp	HIT [®]

Measured in Nagano (Japan) 2012

Year

High Efficiency + High Performance at High Temperatures = High Power Generation

Casa Central Valparaíso Campus – 259 kWp / 255 kW AC



Casa Central Valparaíso Campus – 259 kWp / 255 kW AC



1

Casa Central Valparaíso Substation Valdés

- PV power (kWp) **218**
- Inverter power (kW AC) **215**
- Regimen: Auto Consumption with Surplus Injection. PMGD INS Uso Compartido de Inst. Eléctricas

2

Main Campus Valparaíso Substation San Luis

- PV power (kWp) **40,9**
- Inverter power (kW AC) **40**
- Regimen: Auto Consumption Cero Injection

Main Project Challenges

- Grid Interconnection – PMGD INS Campus existed electric facility - **First in Chile**
- O&M: Seagul

Total PV Generation (MWh/yr) **425**

PV Generation over Campus Consumption **8%**

Viña de Mar Campus – 507 kWp / 499 kW AC



Viña del Mar Campus

- PV power (kWp) **507**
- Inverter power (kW AC) **499**
- Regimen: Auto Consumption with Surplus Injection. PMGD INS Uso Compartido de Inst. Eléctricas

Total PV Generation (MWh/yr) **832**

PV Generation over Campus Consumption **90%**

Main Project Challenges

- Grid Interconnection – PMGD INS Campus existed electric facility - **First in Chile**
- Rooftops Estructural Reinforcements

Vitacura Campus – 126,5 kWp / 125 kW AC



Vitacura Campus

- PV power (kWp) **126,5**
- Inverter power (kW AC) **125**
- Regimen: Auto Consumption with Surplus Injection. PMGD INS Uso Compartido de Inst. Eléctricas

Total PV Generation (MWh/yr) **208**

PV Generation over Campus Consumption **30%**

Main Project Challenges

- Grid Interconection – PMGD INS Campus existed electric facility - **First in Chile**
- Rooftops Estructural Reinforcements

San Joaquín Campus – 99,5 kWp / 95 kW AC



San Joaquín Campus

- PV power (kWp) **99,5**
- Inverter power (kW AC) **95**
- Regimen: Auto Consumption Cero Inyección

Total PV Generation (MWh/yr) **162**

PV Generation over Campus Consumption **10%**

Main Project Challenges

- Cero Inyección Equipment

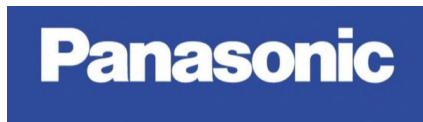
JCM Project Structure - Participants

- Representative Participant
- Support MRV
- Report to GEC

JCM
International Consortium



Int. Consortium Agreement



UNIVERSIDAD TECNICA
FEDERICO SANTA MARIA

- EPC
- Engineering
- Procurement
- Construction

- Invesment
- Project Development
- Operation y Maintenance
- Support MRV

- Rooftop space for the PV project
- Purchase PV energy consumed
- Allow injection of energy surplus
- PV Owner after end of PPA period

EPC Contract

- Power Purchase Agreement [PPA]
- Rooftop Bailment Contract or Zero Cost Lease contract

JCM Financial Program Unlocking New Projects and Opportunities



JCM THE JOINT CREDITING
MECHANISM

Enhance University Sustainability Strategy

Install Leading PV Technology – Panasonic HIT Module 19,7%

Achieve a Competitive Energy Price (\$/MWh) in the Current Chilean Electricity Market

PV Equipment and Data Generation for Academic Purpose

O&M working with UTFSM Entrepreneurs – SolarPro

Potential International Co-operations between Waseda – UTFSM

The Biggest PV Installation in a Latin America University

Viña del Mar Campus – 507 kWp

Marco G. Monroy

Founder and CEO | MGM Innova Group
marcogmonroy@mgminnova.com

María Pía Iannariello

Founder and COO | MGM Innova Group
mariapiai@mgminnova.com



Gonzalo Diaz

Country Representative
MGM Innova Capital Chile
gdiaz@sherpasgroup.cl



Alfredo Nicastro

VP Global Operations
MGM Innova Consulting
anicastro@mgminnova.com



www.mgminnovagroup.com



Thank you