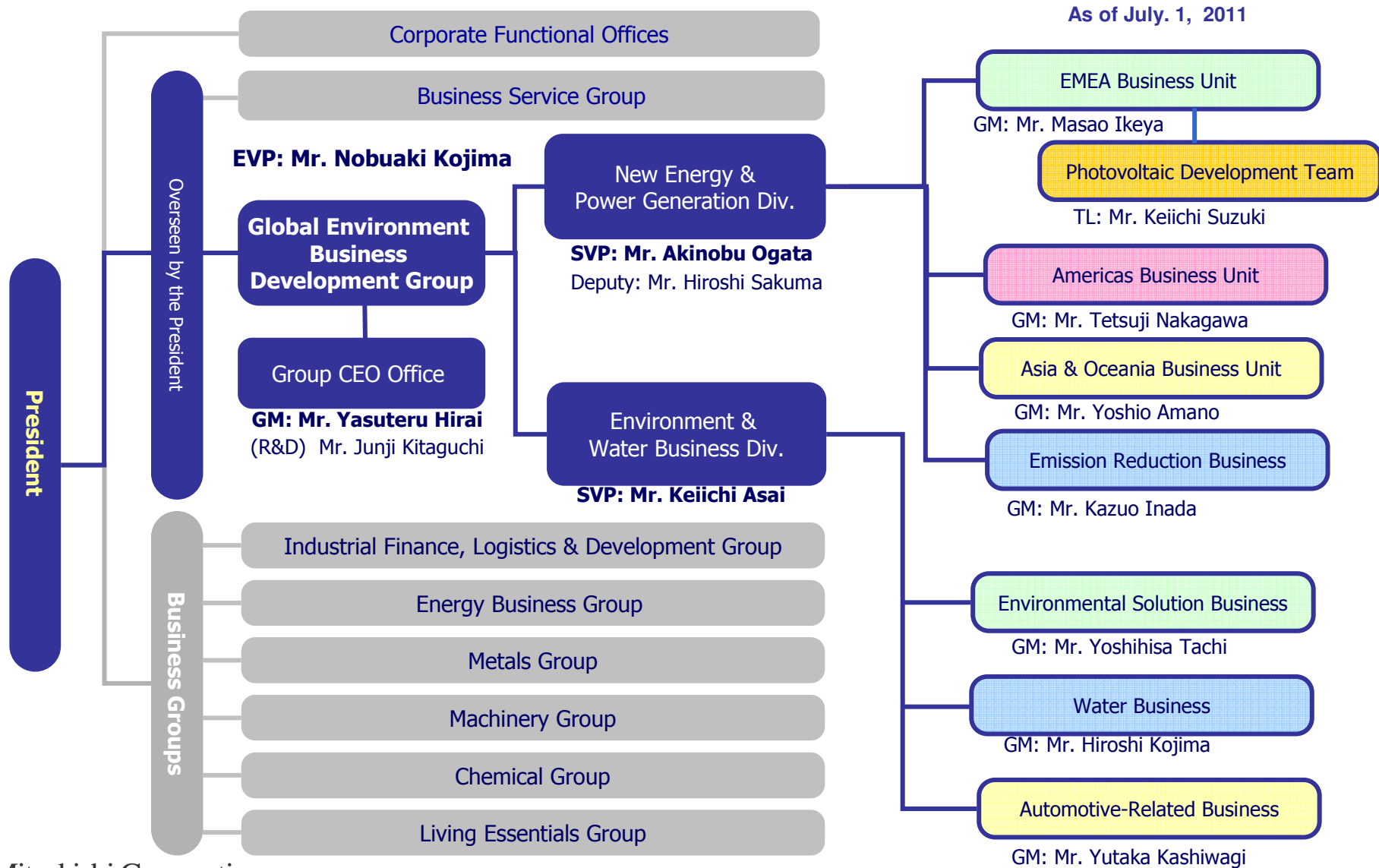

Photovoltaic Power Business in EU
(View from Independent Power Producer)

Keiichi Suzuki
Mitsubishi Corporation

July 2011


Global Environment Business Development Group Organization Chart



Activities


1
Spain CSP Power Generation Business

Concentrated Solar Power (CSP) Plant with Acciona (4 sites x 50 MW)



2
Moura PV Power Generation Business

Operating 46MW PV plant in Moura, Portugal with Acciona




3
Thai PV Power Generation Business

World's largest 73MW PV Plant under construction in Lop Buri, Thailand



4
Thermal Power Generation Business

Develop, own and operate thermal power plant worldwide since 1988



5
Goshen II Wind Project

Investing 37.5% equity interest in approximately 125MW wind project in Idaho, U.S.



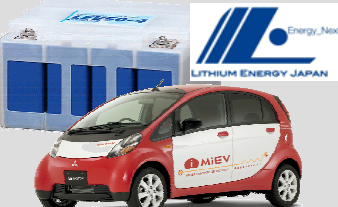
6
Greenhouse Gas Emission Reduction Credit

3rd largest developer In the world

No	Company		Number of project	ESTIMATE VOLUME OF CER in Mil-ton CO ₂
1	Orbeo/Rhodia	France	7	118.1
2	ENEL	Italy	58	110.8
3	Mitsubishi Corporation	Japan	63	93.1
4	EcoSecurities	UK	258	87.7
5	Natsource	USA	13	78.8

7
Lithium Energy Japan

Manufacturing Lithium Ion Batteries for EV such as iMiEV, the first commercialized EV in the world



8
Swing Corporation (Ebara Engineering Service CO., Ltd)

Invested to Swing, a J/V between MC, Ebara, and JGC, to combine each company's strength in water business



9
Water Business In Australia

Acquired United Utilities Australia in 2010, the 2nd largest Australian water business company

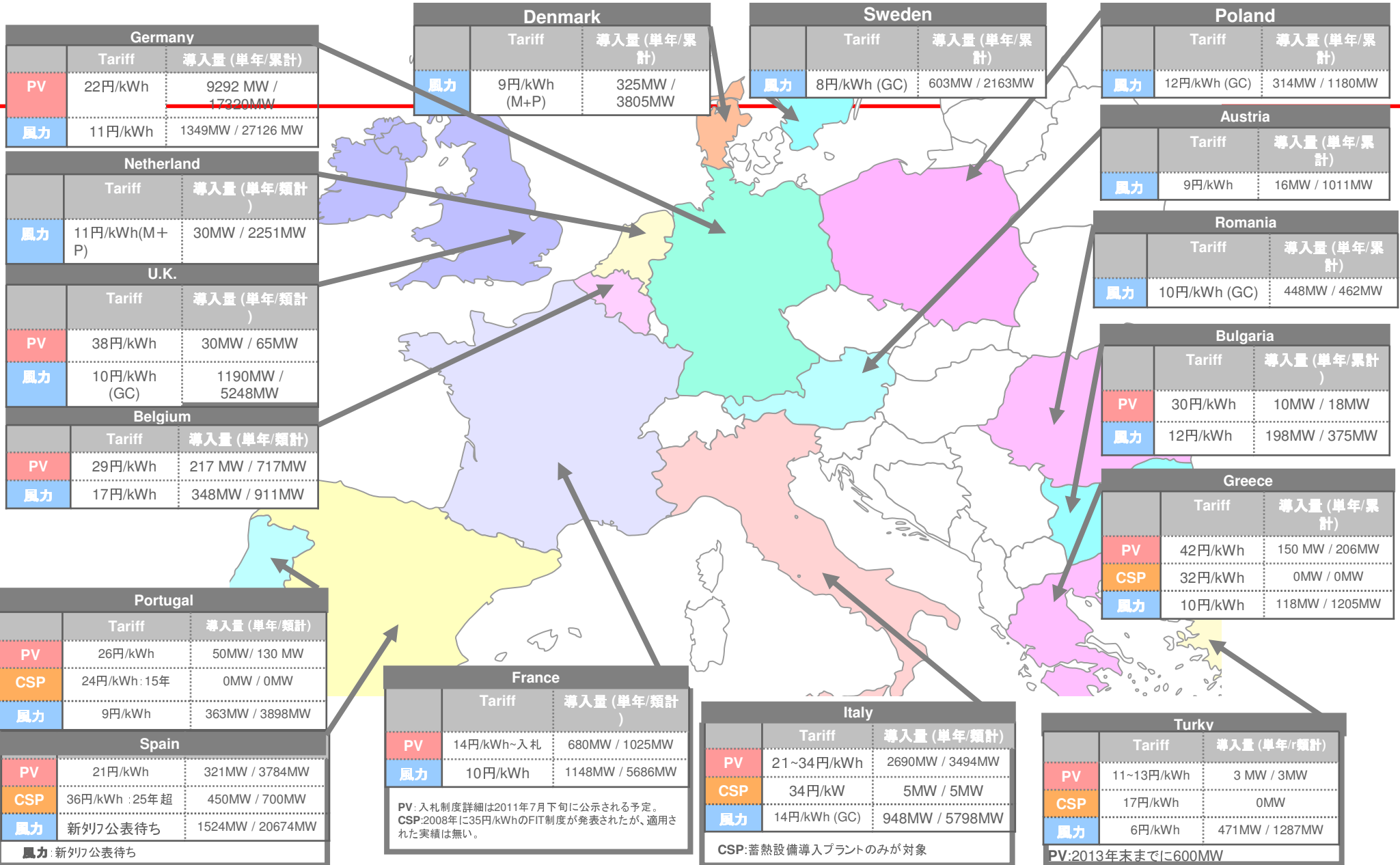


10
R&D activities

39 years' partnership with Battelle, world largest independent R&D institute. Revenue: 5 Billion \$/year Employees: 25,000 persons



European Feed-in-Tariff at glance



出典: PV :EuPD Research Interim Report/ CSP:2011年2月CS調べ

What is happening now?

Bad News

- Series of FIT revisions, such as in Italy, France, Bulgaria (within months, not years)
- Aftermath of Spain's "Retroactive change of rule"
- Decrease of tariff (cent euro/kwh), and strictness of "timing of security of tariff"
- France and Italy introduced overall "capping" system.

Good News

- EPC Cost is also decreasing.
- "Cowboy" developers are disappearing.
- PV Market is rationalizing (development, EPC, IPP).
- Approaching to "Grid Parity" world.

What requires for Investment Decision

Asset side

- Top line: FIT system (tariff, period, inflation), Irradiation, Country Risk, System Risk
- Capex: EPC Cost + Development (Permits) Cost + Financing Cost (Bank fee, Interest during construction)
- Opex: O&M, rent (lease), insurance, management fee
- Bottom line: Taxation (ex. Withholding Tax, Local Tax), Dividend restrictions, Distributable cash flow

Financing side

- Recourse or Non-recourse
- Debt Equity Ratio
- Negative Covenants (DCSR, DE ratio, EBITDA)
- Pricing (Premium + Swap rate + Euribor)
- JBIC, NEXI (Credit Support, if necessary)

Challenges for IPP Player

Projects

- Uncertainty of the top line = System Risk (FIT)
- Construction (Connection) Risk = who will take the Risk? Becoming tougher and tougher....
- Speed = very fast decision making is the key.

Banks

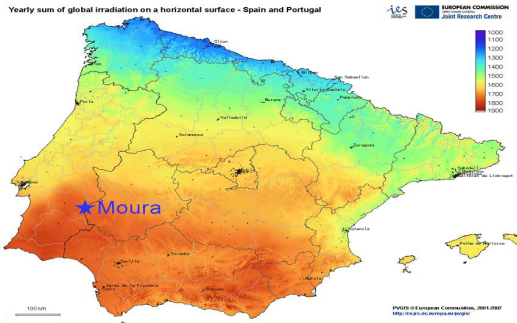
- Premium is going up a little....(Spain, Country risk in South Europe)
- Timing of Financing (becoming much more conservative)
- Speed of Due Diligence (some developers are now full equity financing...)

Challenges for Team Japan

- It might be a huge chance for Japanese IPP, Banks, EPCs, Panel Supplier to export whole system.
- JBIC or NEXI is helping above activities.
- Speed is the issue for Corporate Japan.

MC's PV IPP Business (PV IPP projects)

Site location in Portuguese



Owner : Acciona 66%
MC 34%

Capacity : 46MWp

Location : Moura, Portuguese

Type : Ground-mounted

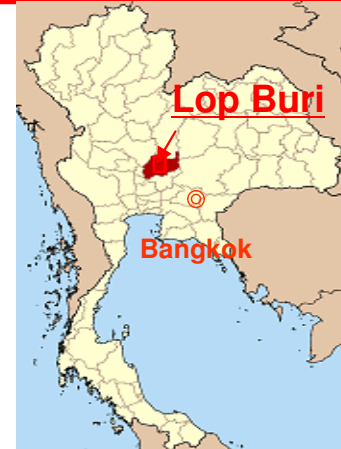
COD : Jan. 2009

PV Plant (46MW) Operational

Site pictures



Site location in Thailand



Owner : Natural Energy Development
(JV of CLP / DGA / EGCO)

Capacity : 73MWp

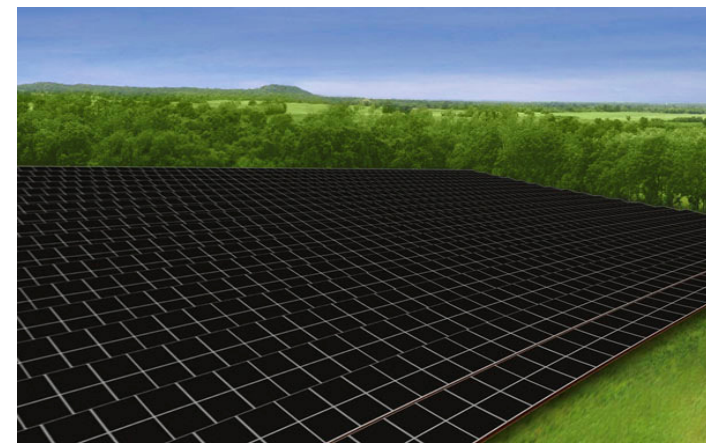
Location : Lop Buri, Thailand

Type : Ground-mounted

COD : 2011

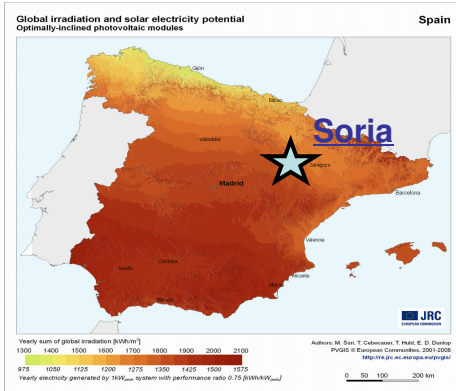
PV Plant (73MW) COD 2011

Site Image



MC's PV IPP Business (PV IPP projects)

Site location in



Owner : MC Solar Cascaras de Cofin S.L.U
(100% Owned by MC)
Capacity : 1.12MWp
Location : Soria, Spain
Type : Ground-mounted
COD : Sep 2008

Site location in Brunei



Owner : Brunei Government
(Donated by MC)
Capacity : 1.2MWp
Location : Seria, Brunei
Type : Ground-mounted
COD : Aug 2010
Note : Different type of PV modules are tested to identify the best performance PV technology

PV Plant (1.1MW) Operational

Site pictures



PV Demo Plant (1.2MW) COD Aug 2010

Site Image

