CV
Professor Dr. Dusit Kruangam
Managing Director
Thai Solar Future Company Limited
(Update July 2012)

First Name-Family Name: **Mr. Dusit Kruangam**

ศาสตราจารย์ ดร. ดุสิต เครืองาม

Date of Birth: September 5,1958
Sex: Male
Marital Status: Married
Nationality: Thai
Home Address: 10/31 Soi Prachachuan 30, Prachachuan Road, Bangkok 10800, Thailand.
Tel: 02-587-6244 Mobile 085-918-3691

Present Position and Business Address:
Managing Director
Chairman of the Board of Directors
Thai Solar Future Co., Ltd.
99/227-228 Tesaban Sngkhro Road, Ladyao, Chatuchak, Bangkok 10900.
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Education:

1981 Bachelor of Engineering (Electrical Engineering), Nagoya University, Nagoya, Japan.
1985 Master of Engineering (Electrical Engineering), Osaka University,Osaka, Japan.
1988 Doctor of Engineering (Electrical Engineering), Osaka University, Osaka, Japan.

Working Experiences:

1988-2005 Professor, Dept. of Electrical Eng., Fac. of Eng., Chulalongkorn University.
2005-2008 Deputy CEO, Solartron Public Company Limited
2008-2009 Deputy Managing Director, Ekarat Solar Co., Ltd.
2009-Present Managing Director, Thai Solar Future Co., Ltd.

Pioneering Works:

Development of "Amorphous Silicon Solar Cells"
Development of "Visible-Light Amorphous Semiconductor Thin Film Light Emitting Diodes"
Development of "Amorphous Semiconductor Photocouplers"

Experiences on Production of Amorphous Silicon Solar Cells:

1983-1988 At Osaka University

- Design and installation of single chamber RF Plasma Chemical Vapor Deposition System using monosilane gas
- Design and installation of multi-chamber RF Plasma Chemical Vapor Deposition System using monosilane gas
- World record achievement of fabrication of 12.00% amorphous silicon solar cells
- World first propose and fabrication of amorphous silicon solar cells using microcrystalline silicon as the active layer (I-layer)

1988-2008 At Chulalongkorn University

- Design and installation single chamber RF Plasma Chemical Vapor Deposition Systems using monosilane gas (2 systems)
- Set up characterization systems of amorphous silicon materials and solar cells (structural, optical, electrical properties)

Important Consultancy and Social Services:

Domestic

2001-2009 Specialist in the Standing Committee on Energy, the House of Representatives
2003-2006 Policy Advisor to the Minister of Energy, the Kingdom of Thailand
2010-present Academic Committee Member of Council of Rajamangkhlala University of Technology Srivichaya
2012-present Founder and Chairman of Thai Photovoltaic Industries Association (TPVA). www.TPVA2012.com

International

1996 Member of Organizing Committee of World Renewable Energy Congress V, Florence, Italy
1996 Member of Organizing Committee of World Renewable Energy Congress VI, UK.
1996 Member of Organizing Committee of 2nd Thailand-Japan Joint Seminar on Photovoltaics
1999 Member of Organizing Committee of 1st Thailand-Korea Joint Seminar on Semiconductors
2001-2004 Secretary – General of 14th International Photovoltaic Science and Engineering Conference (PVSEC-14), January, 2004, Bangkok, Thailand.

Awards:

During Student Periods

1982 1st Award of Speech Contest in Japanese Language Organized by Federal Society of Japan Industries & Federal of Japan Commerce's
1981 1st Award of Speech Contest in Japanese Language Organized by OISCA
1987 Graduate Student Award of Materials Research Society (MRS), U.S.A., from the Pioneering Development of Amorphous Silicon-Carbide Thin Film Light Emitting Diode

During Working Periods

1991 2nd Award of Device Invention, National Research Council of Thailand (NRCT)

from "Hydrogenated Amorphous Silicon Low Cost Solar Cells"
1991 Promising Scientist Award of Foundation for The Promotion of Science & Technology under the Patronage of His Majesty the King
1992 ASEAN Young Scientist & Technologist 1st Award of ASEAN Committee on Science & the Government of Singapore from the "Pioneering Development on the amorphous silicon nitride & carbide thin film light emitting diode"
1994 1st Award of Device Invention, NRCT from "Amorphous Semiconductor Thin Film Light Emitting Diode -Towards New Type of Flat Panel Display-"
1994 EDN Innovator Award of EDN ASIA Electronics Magazine in Hong Kong from the development of "Amorphous Thin Film Light Emitting Diode"
1995 Career Development R&D Award from National Science & Technology Development Award
1996 Premier Professor Chair Award from Premier Global Corporation Co., Ltd.
1997 Science & Technology Award from Thailand Toray Science Foundation (Group Award)
1997 Young Engineer Award from the Association of Engineering Alumni of Chulalongkorn U.
2003 Outstanding Researcher Award (Natural Science and Mathematics) from National Research Council of Thailand (NRCT)

Patents:

1) Dusit Kruangam, Inventor, "Amorphous Semiconductor Thin Film Light Emitting Diode", United States Patent, Number 5,656,823, Date of Patent August 12, 1997 (Assignee: Chulalongkorn University).
2) Dusit Kruangam, Inventor, "Amorphous Semiconductor Photocoupler", United States Patent, Number 6,403,984 B1, Date of Patent June 11, 2002 (Assignee: Chulalongkorn University).

Fields of Specialization:

Amorphous Silicon Solar Cells, Solar Cells, Photovoltaic Applications, Amorphous Semiconductors, Vacuum Technology, Plasma Technologies, Laser Engineering, Quantum Devices, Optoelectronics, Thin Films.

Books

(In Thai Language)

1. Solid State Physics, (C-Education Publishing, Bangkok, 1992), 557 pages.
2. Fundamentals of Electricity, (Translated, Kubota Co., Ltd., 1992), 106 pages (co-authors).
3. Optoelectronic Devices, -Physics, Technology and Applications-, Vol. 1, (Chulalongkorn University Press, 1999), 874 pages,
4. Optoelectronic Devices, -Physics, Technology and Applications-, Vol. 2, (Chulalongkorn University Press, 2000), 930 pages,

(In English Language)

1. Amorphous and Microcrystalline Semiconductor Devices; Optoelectronic Devices, Edited by J. Kanicki, (Artech House, Boston, London, 1991), 458 pages (chapter 6).
2. Amorphous Semiconductor Technologies & Devices, Edited by Y. Hamakawa, ((OHM, North-Holland, 1998), 318 pages (chapter 7.3).
3. Properties of Amorphous Silicon, Edited by S.M. Searl, (INSPEC Publication, IEE, 1998), (chapters 6 & 7).

Lectures:

1. Solid State Physics
2. Physics of Special Semiconductor Devices (Optoelectronic, amorphous silicon, quantum well devices)
3. Properties of Electrical Engineering Materials

Granted Research Projects:

Title of the Research	Year	Research Fund
Impacts of PV Applications to Rural Development in Thailand	1988	Hitachi Scholarship Foundation,Japan.
a-Si:H/c-Si Heterojunction Solar Cells	1988	Stiftung Volkswagenwerk Foundation, Germany
Fabrication of Amorphous Silicon Low Cost Thin Film Solar Cells	1989-1990	National Research Council of Thailand (NRCT)
Fabrication of Electroluminescent Display	1990	Toray Science Foundation, Japan
Fabrication of ZnS Thin Film for EL Display	1990	Research Division, Chulalongkorn University.
PV System for Prawn Farms	1990	Semiconductor Device Research Laboratory.
Fabrication of Amorphous Si Solar Cells and a-Si:H Color Sensors	1990-1991	by Research Division, Chulalongkorn University
PV System for Prawn Farms	1991	Research Division, Chulalongkorn University.
Fabrication of Amorphous Silicon Solar Cell	1992-1993	NECTE, NSTDA
Fabrication of Amorphous Semiconductor Thin Film Light Emitting Diode	1992-1993	Research Division, Chulalongkorn University.
Molecular Beam Epitaxy	1992-1993	JICA
PV System for Green E-Sarn Project	1992	Green E-sarn Project, Royal Thai Government
Fabrication of Amorphous Thin Film Light Emitting Diode Display & Its Applications	1993	Premier Global Corp. Ltd., Thailand
Molecular Beam Epitaxy	1994	Royal Thai Government
Development of Amorphous Thin Film Light Emitting Diode for New TV & Flat Panel Displays	1995	Career Development Program, Nationa Science and Technology Development Agency (NSTDA).
Application of Solar Cells to Rubber Plantation in Thailand	1996	Semiconductor Research Laboratory & NSTDA
Application of Amorphous Silicon Solar Cells to Mobile Telephones	1996	Semiconductor Research Laboratory & NSTDA
Pre-Feasibility Study on the Soar Cells Production in Thailand	2003	Department of Alternative Energy Development and Efficiency, Ministry of Energy

Publications (Journals, Conference Papers and Technical Reports):
International 50 articles
Domestic 113 articles

Contributions of Prof. Dusit Kruangam on the Development, Industry and Business on Solar Photovoltaics

Thai Solar Future Co., Ltd. was established and managed by Professor Dr. Dusit Kruangam who is a worldwide reputation in the field of solar photovoltaic science and technology. Dr. Dusit Kruangam received his Ph.D. Degree of elecrical engineering from Osaka University, Japan in 1988. During 1998-2006, he worked at the department of electrical engineering, faculty of engineering, Chulalongkorn university, Bangkok, Thailand. He served as a policy advisor to several ministers of energy and deputy of prime minister of the government of Thailand, specialist of the standing committee on energy of the house of representatives.

He published more than 150 international and domestic papers. He wrote 3 international text books including Amorphous & Microcrystalline Semiconductor Devices (Artech House, 1991), Amorphous Semiconductor Technologies & Devices (OHM North-Holland, 1998), Properties of Amorphous Silicon (INSPEC, IEE, 1998). He wrote 4 Thai text books including Fundamental of Electricity, Solid State Physics, Optoelectronic Devices Volume 1 and Volume 2.

With over 25 years experience in semiconductor technology and management, he hold two USA patents, received many awards including ASEAN Outstanding Young Scientist & Technologist Award, Outstanding National Researcher Award, 1st Award of National Device Invention Award, etc.

Professor Dusit has contributed a lot of his time in the promotion of solar photovoltaic industries and markets including investment promotion program by the Board of Investment (BOI), Adder and Feed In Tariff Programs for PV by the ministry of energy, research and development program of PV in the ministry of science and technology.

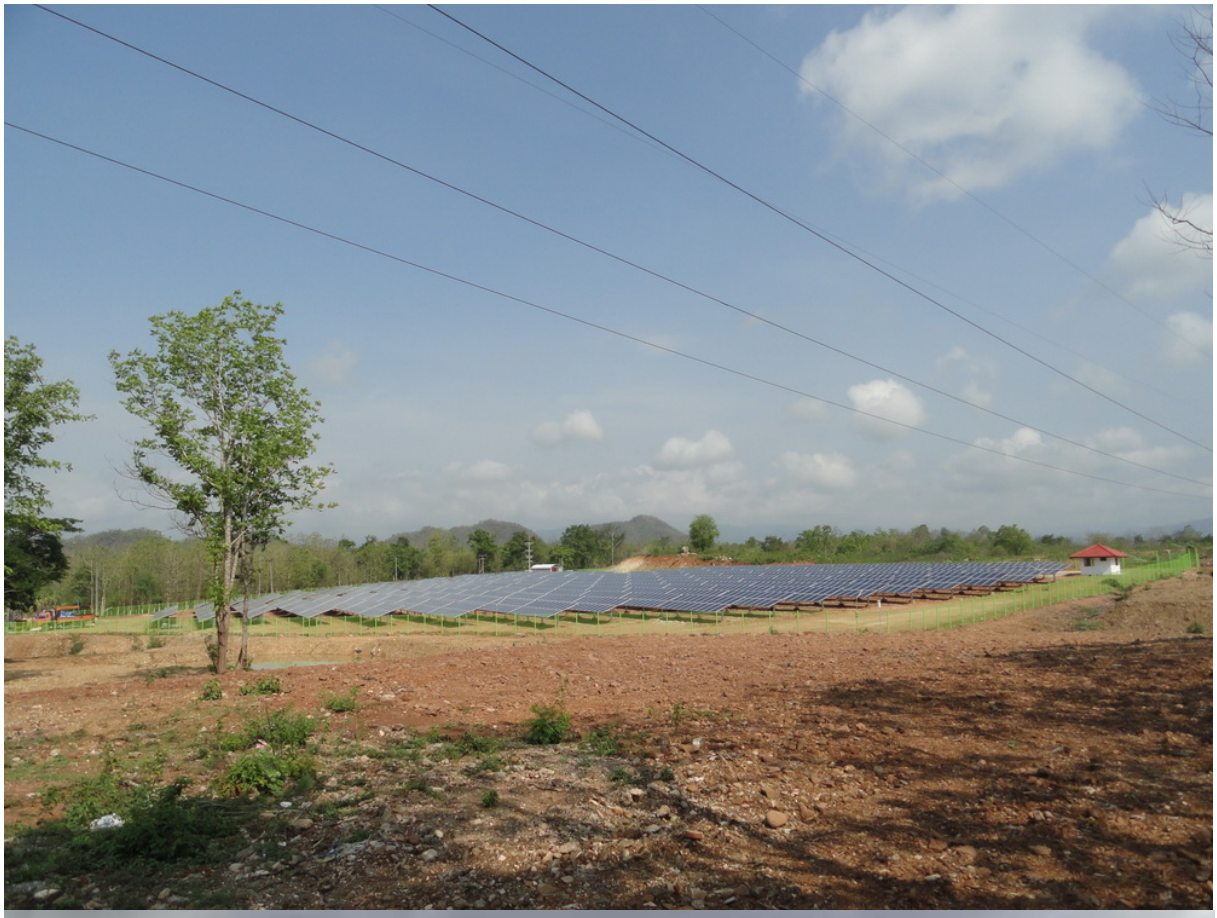
During 2006-2008, Professor Dusit worked as a deputy chief executive officer (deputy CEO) at Solartron Public Company Limited where he was in charge of production of crystalline silicon solar modules, design & installation of PV systems both off grid and on grid types more than 100,000 systems. He is a key-man who managed so that Solartron was able to register in the Stock Exchange of Thailand in 2007. He also contributed in the sales and marketing of PV systems.

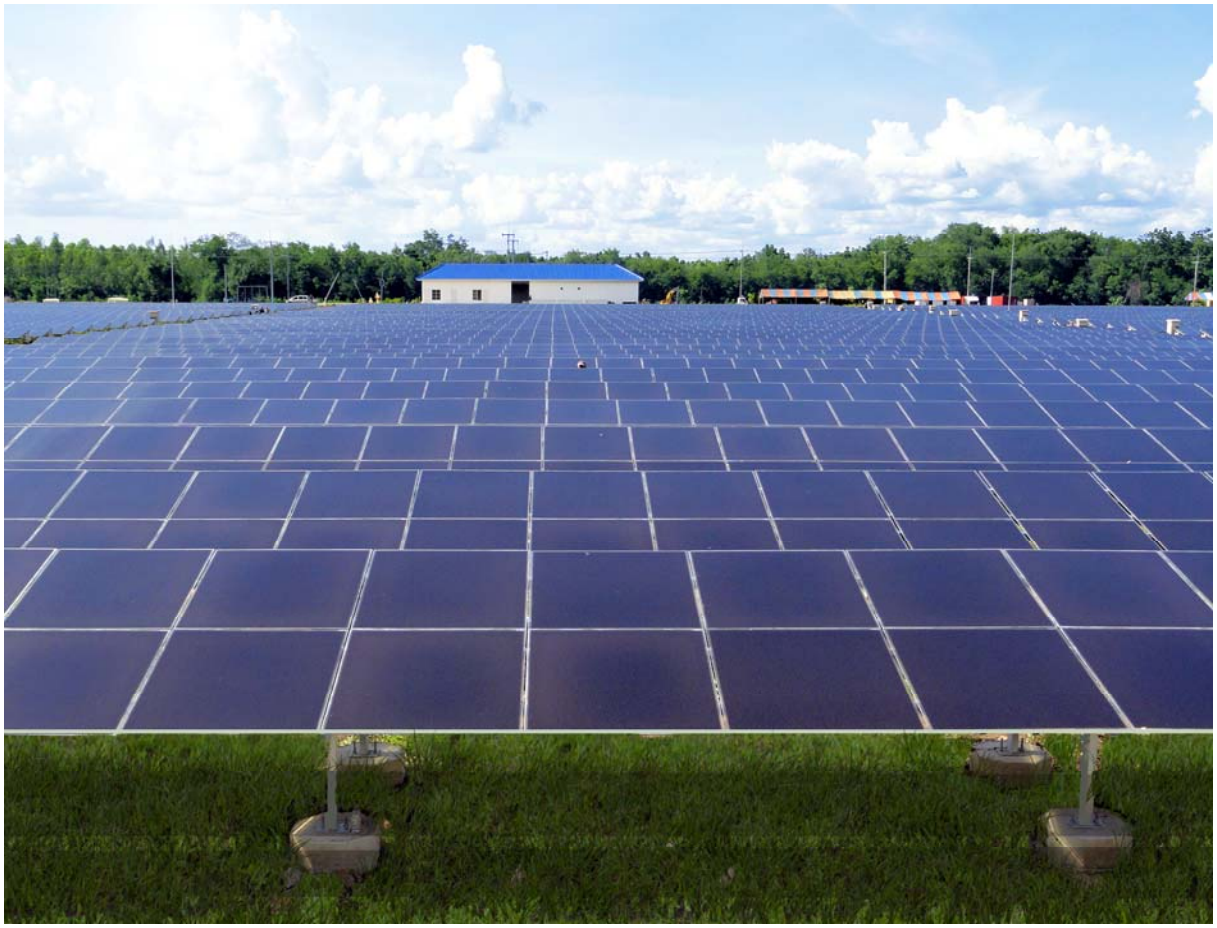
Dusit 2008-2009, Professor Dusit moved to Ekarat Solar Co., Ltd., where he was in charge of the production of crystalline silicon solar cells and modules as well as design & installation of PV systems.

In order to be a bridge between PV industries and consumers, Professor Dusit established "Thai Solar Future Co., Ltd.," having a large show room in Bangkok in 2009.
Thai Solar Future provides turnkey solutions (EPC Solar) on design and installation of solar photovoltaic systems both off grid (with batteries), on grid (without batteries) and large scale solar farms.

Professor Dusit Kruangam's Oustanding Works on Solar Photovoltaics:

1. Early experience on the fabrication of amorphous silicon thin film solar cells in 1983 and achieved 12% world record of conversion efficinncy in 1988 using multijunction layer and wide band gap a-SiC:H technology. (at Osaka University)
2. Started the fabrication of amorphous silicon thin film solar cells at Chulalongkorn University, Thailand in 1988 and received several awards from the government of Thailand.
3. General Secretary of the Project to honor His Majesty the King on the Occasion of 72th Years Anniversary by Installation of Solar Photovoltaic Systems at the Royal King Projects.
4. Advisor to EGAT for the Project of Installation of Sixty Sets of Solar Roof Grid Connected Systems (Demonstration) in 2000-2005.
5. Advisor to EGAT for the Project of Construction of 500 kW Solar PV Farm in Mae Hong Sorn Province in 2006.
6. Encouragement of the ministry of energy to start the Feed In Tariff Program for PV and other renewable energy in Thailand.
7. Team reader of the research on the "Pre-Feasibility Study on the Production of Solar Cells and Related Materials in Thailand" , reported to the Department of Development of Alternative Energy and Energy Efficiency (DEDE), ministry of energy in 2007. (After that several solar factories-Solartron, Bangkok Solar, Sharp Thai, Thai Agency Engineering, Ekarat Solar were built in Thailand.)
8. Encouragement of BOI to announce special promotion program for the production of solar cells in Thailand in 2005.
9. Advisor to the mega project "203,000 Solar Home Systems". ministry of interior and ministry of energy in 2005. 24 MWp (each of 120 Wp) of solar home systems were installed. More than 1 million Thai people in the rural areas get electricity.
10. Installation of 460 kWp solar roof system at TESCO LOTUS department store, Rama 1 branch, Bangkok in 2006.
11. Committee member on the draft of standardization of solar PV module, ministry of industry in 2008.
12. Supplied 800 kWp multicrystalline si modules to EGAT, Ubonratchathanee province, 2008.
13. Designed and installed 330 kWp solar roof system for Energy Complex Co., Ltd, Bangkok, 2009.
14. Designed and installed 630 kWp solar farm for Ekarat Engineering PCL., Pracheenburee province in 2010.
15. Having experience on design and installation of more than 12 MWp solar PV systems, 1988-2010.
16. EPC for 1.6 MWp solar farm for Solar Park Co., Ltd., in Lopburi province in 2011.
17. EPC for 5.5 MWp solar farm for Thai Power Plants group in Saraburi province in End of 2011-2012.
18. EPC for 1.0 MWp solar farm for Chiangrai North Wood Co., Ltd., in Lampang province in End of 2011-2012.
19. EPC for 1.0 MWp solar farm for PP Solar Power Co., Ltd., in Nongkhai province in 2012.
20. **Founder and Chairman of "Thai Photovoltaic Industries Association" (TPVA) in 2012.**





Reference Solar PV Projects
Designed and Constructed by Professor Dusit Kruangam as Project Manager
(Update July 2012)

No.	Owner	Type of Customer	Province	System	Power (kWp)	Status	Year	Responsibility	Company
57	PP Solar Power Co., Ltd.	Commercial	Nongkhai	Solar Farm	1,000.0	Construction	2012	Project Manager	Thai Solar Future
56	Ratburi School (donated by JEC)	Commercial	Ratburi	On Ground	3.8	Construction	2012	Project Manager	Thai Solar Future
55	Sabic Innovative Plastics (Thailand) Co., Ltd.	Commercial	Bangkok	Solar Roof	7.5	Construction	2012	Project Manager	Thai Solar Future
54	Than-Ya Shopping park	Commercial	Bangkok	Solar Roof	6.6	Construction	2012	Project Manager	Thai Solar Future
53	Green Park, Siam City Cement PCL.	Commercial	Saraburi	Solar Roof	2.1	Completed	2012	Project Manager	Thai Solar Future
52	Baan Prue Noi School	Commercial	Prachuab	On Ground	2.6	Completed	2012	Project Manager	Thai Solar Future
51	The Protheses Foundation of H.R.H. The Princess Mother	Commercial	Chiangmai	Solar Roof	11.0	Completed	2012	Project Manager	Thai Solar Future
50	Chiangrai North Wood Co., Ltd.	Commercial	Lampang	Solar Farm	1,000.0	Completed	2012	Project Manager	Thai Solar Future
49	Thai Solar Plants group	Commercial	Saraburi	Solar Farm	5,700.0	Completed	2012	Project Manager	Thai Solar Future
48	Solar Park Co., Ltd.	Commercial	Lopburi	Solar Farm	1,600.0	Completed	2011	Project Manager	Thai Solar Future
47	TESCO-LOTUS Market	Commercial	Cholburi	Solar Roof	330.0	Completed	2011	Project Manager	Thai Solar Future
46	Central World Plaza	Commercial	Bangkok	Solar Roof	130.0	Completed	2011	Project Manager	Thai Solar Future
45	IKEA Departent Stor, MEGA Bangna	Commercial	Bangkok	Solar Roof	240.0	Completed	2011	Project Manager	Thai Solar Future
44	Consumer Foundation	Commercial	Bangkok	Solar Roof	11.0	Completed	2011	Project Manager	Thai Solar Future
43	Delta Electronics (Thailand) PCL.	Commercial	Samutprakarn	Solar Roof (Car Park)	11.0	Completed	2011	Project Manager	Thai Solar Future
42	Prof. Dr. Wissanu Kruangam	Residential	Bangkok	Solar Roof	3.6	Completed	2011	Project Manager	Thai Solar Future
41	Sharp Appliances (Thailand) Co., Ltd. (Sub of Sharp Thai)	Commercial	Chaseongsao	Solar Roof	64.0	Completed	2011	Project Manager	Thai Solar Future
40	Chao Praya Hospital (Sub of BSC)	Commercial	Bangkok	Solar Roof	6.4	Completed	2011	Project Manager	Thai Solar Future
39	Ban Makok Resort	Commercial	Trad	Solar Roof	3.8	Completed	2011	Project Manager	Thai Solar Future
38	Tripetch Isuzu Co., Ltd.	Commercial	Bangkok	Solar Roof	2.3	Completed	2011	Project Manager	Thai Solar Future
37	Ekarat Engineering PCL.	Commercial	Pracheenburi	Solar Farm	630.0	Completed	2010	Project Manager	Thai Solar Future
36	Mr. Sarot Sornnoi	Commercial	Nakorn Nayok	Solar Farm	30.0	Completed	2010	Project Manager	Thai Solar Future
35	Thammasart University, Rangsit (Sub of BSC)	Commercial	thanee	Park)	23.0	Completed	2010	Project Manager	Thai Solar Future
34	Petchaboon Innovation Co., Ltd.	Commercial	Petchaboon	Park)	20.2	Completed	2010	Project Manager	Thai Solar Future
33	HRH Princess Sirindhorn Herb Garden (Sub of Ekarat Solar)	Commercial	Rayong	Solar Roof	10.1	Completed	2010	Project Manager	Thai Solar Future
32	Sky Park Hotel	Residential	Hadyai,	Solar Roof	6.7	Completed	2010	Project Manager	Thai Solar Future
31	Mr. Montri Uwanno	Residential	Hadyai,	Solar Roof	3.6	Completed	2010	Project Manager	Thai Solar Future
30	Mr. Danaithorn Jarupukpan	Residential	Songkhla	Solar Roof	3.6	Completed	2010	Project Manager	Thai Solar Future
29	Khunying Sompong Wannissorn	Residential	Bangkok	Solar Roof	3.6	Completed	2010	Project Manager	Thai Solar Future
28	Ms. Wanna Siriwong	Residential	Hadyai,	Solar Roof	3.6	Completed	2010	Project Manager	Thai Solar Future
27	Ms. Marisa Sorajja	Residential	thanee	Solar Roof	3.6	Completed	2010	Project Manager	Thai Solar Future
26	Thai Ceramic Industry Co., Ltd. (Sub of BSC)	Commercial	Sraburi	Solar Roof	2.8	Completed	2010	Project Manager	Thai Solar Future
25	ML. Pee Malakool Na Ayudthaya	Residential	Bangkok	Solar Roof	2.5	Completed	2010	Project Manager	Thai Solar Future
24	Prof. Dr. Annob Kunawongkrit	Commercial	Nakornratchasima	Minigrid	1.2	Completed	2010	Project Manager	Thai Solar Future
23	Ms. Sirima Kruangam	Residential	Hadyai,	Solar Roof	1.2	Completed	2010	Project Manager	Thai Solar Future
22	Thai Containers Group Co., Ltd. (Sub of BSC)	Commercial	Samutprakarn	Solar Roof	0.8	Completed	2010	Project Manager	Thai Solar Future
21	Thai Polymers Supply	Commercial	Nakhornphanom	Minigrid	0.3	Completed	2010	Project Manager	Thai Solar Future
20	Ms. Pajongjit Booraphawinitpong	Residential	Bangkok	Solar Roof	2.0	Completed	2009	Project Manager	Thai Solar Future
19	Dr. Pirom Jeamsai	Residential	Bangkok	Solar Roof	2.0	Completed	2009	Project Manager	Thai Solar Future
18	Dr. Dusit Kruangam	Residential	Bangkok	Solar Roof	2.0	Completed	2009	Project Manager	Thai Solar Future
17	Energy Complex Co., Ltd.	Commercial	Bangkok	Solar Roof	330.0	Completed	2009	Project Manager	Ekarat Soalr
16	Boonthavorn Co., Ltd	Commercial	Bangkok	Solar Roof	20.0	Completed	2009	Project Manager	Ekarat Soalr
15	Ekarat Engineering PCL	Commercial	Chasengsao	Solar Roof	42.0	Completed	2008	Project Manager	Ekarat Soalr
14	Ekarat Solar Co., Ltd	Commercial	Rayong	Solar Car Park	28.0	Completed	2008	Project Manager	Ekarat Soalr
13	Sahacogen PCL	Commercial	Cholburi	Solar Car Park	30.0	Completed	2008	Project Manager	Solartron
12	Dept. Highway	Commercial	Bangkok	Solar Roof	5.0	Completed	2008	Project Manager	Solartron
11	Dept. Ground Water, Others	Commercial	Thailand	Solar Pump	50.0	Completed	2007	Project Manager	Solartron
10	Dept. Military Energy	Commercial	Bangkok	Solar Roof	5.0	Completed	2007	Project Manager	Solartron
9	EGAT, Headquater	Commercial	Bangkok	BIPV	27.0	Completed	2007	Project Manager	Solartron
8	TESCO LOTUS, Rama 1 Road Branch	Commercial	Bangkok	Solar Roof	460.0	Completed	2006	Project Manager	Solartron
7	Solar Home Projects, 120 Wp x 107,000 Systems	Commercial	Thailand	Solar Home	12,000.0	Completed	2005-2007	Project Manager	Solartron
6	EGAT	Commercial	Maehongsorn	Solar Farm	500.0	Completed	2003	Advisor	Chulalongkorn U
5	EGAT 3 kWx 50	Commercial	Thailand	Solar Roof	150.0	Completed	2001	Advisor	Chulalongkorn U
4	EGAT 3 kW x 10	Commercial	Bangkok	Solar Roof	30.0	Completed	1998	Advisor	Chulalongkorn U
3	The Project to Honor His Majesty King 1999	Commercial	Thailand	Grid/Off Grid	100.0	Completed	1999	Secretary	Chulalongkorn U
2	Green Project. Ministry of Defense	Commercial	North Eastern	Minigrid	5.0	Completed	1992	Researcher	Chulalongkorn U
1	Yang Men Village	Commercial	Chiangmai	Minigrid	1.0	Completed	1988	Researcher	Chulalongkorn U
				TOTAL	**24,671.4**				
				TOTAL	**24.7**	**MWp**			