






Photovoltaic Power Plants 86 MWp, Poland

RENEWABLES	DESCRIPTION	
ACTIVITIES		
Development	Expert in charge:	Dr.-Ing. M. Eichelbrönner
■ Engineering	Target/ project:	86 units per 1 MWp
Tendering	Period:	Dec 2019 – Dec 2021
■ Implementation	Client:	Green Energy Venture AG
Due Diligence	Location:	Poland, Switzerland
Transaction	<ul style="list-style-type: none"> ■ Implementation of planning team ■ Responsible for all engineering works ■ Detailed engineering of all plants ■ Energy yield assessments, third party approved ■ Bankability and due diligence approved design and processes ■ Construction supervision upon COD ■ Performance controlling (ongoing) 	
Finance Support		
Management		
Operation		
Audit / Appraisal		
■ Advisory		
Restructuring		



Photovoltaic Power Plant 44 MWp, Malaysia

RENEWABLES	DESCRIPTION	
ACTIVITIES	<p>Expert in charge: Dr.-Ing. M. Eichelbrönner</p> <p>Target/ project: Development, Tender Submission, COD, Performance Controlling</p> <p>Period: Jan 2014 – Dec 2021</p> <p>Client: Majulia Sdn Bhd Greencells Group</p> <p>Location: Malaysia</p> <ul style="list-style-type: none"> ▪ Site evaluation including grid connection ▪ Solar irradiation and yield assessment, technical design and optimization ▪ Submission process and project application to Energy Commission (KETTHA) ▪ Non-recourse project finance support ▪ Detailed design support electrical and subconstruction 	
<ul style="list-style-type: none"> ▪ Development 		
<ul style="list-style-type: none"> ▪ Engineering 		
<ul style="list-style-type: none"> ▪ Tendering 		
<ul style="list-style-type: none"> ▪ Implementation 		
<ul style="list-style-type: none"> Due Diligence 		
<ul style="list-style-type: none"> Transaction 		
<ul style="list-style-type: none"> ▪ Finance Support 		
<ul style="list-style-type: none"> Management 		
<ul style="list-style-type: none"> Operation 		
<ul style="list-style-type: none"> Audit / Appraisal 		
<ul style="list-style-type: none"> ▪ Advisory 		
<ul style="list-style-type: none"> Restructuring 		



Photovoltaic Power Plant 9 MWp, Malaysia

RENEWABLES	DESCRIPTION	
ACTIVITIES		
<ul style="list-style-type: none"> ■ Development 	Expert in charge:	Dr.-Ing. M. Eichelbrönnner
<ul style="list-style-type: none"> ■ Engineering 	Target/ project:	Development, Tender Submission, COD, Performance Controlling
<ul style="list-style-type: none"> ■ Tendering 	Period:	Jan 2017 – Dec 2021
<ul style="list-style-type: none"> ■ Implementation 	Client:	JENTAYU CAPITAL Sdn Bhd
Due Diligence	Location:	Malaysia
Transaction	<ul style="list-style-type: none"> ■ Site evaluation including grid connection ■ Solar irradiation and yield assessment, technical design and optimization ■ Submission process and project application to Energy Commission (KETTHA) ■ Non-recourse project finance support ■ Commissioning and COD achieved September 2019 ■ Performance controlling for first 2 years of operation ■ Energy yield outperforms 	
<ul style="list-style-type: none"> ■ Finance Support 		
Management		
Operation		
Audit / Appraisal		
<ul style="list-style-type: none"> ■ Advisory 		
Restructuring		



Photovoltaic Roof Top 1 MWp



RENEWABLES

DESCRIPTION

ACTIVITIES

- Development
- Engineering
- Tendering
- Implementation
- Due Diligence
- Transaction
- Finance Support
- Management
- Operation
- Audit / Appraisal
- Advisory
- Restructuring

Expert in charge: Dr.-Ing. M. Eichelbrönner
Dr.-Ing. Wolfgang Kottnik

Target/ project: Development, Tender Supervision, COD, Performance Controlling

Period: June 2016 – Dec 2019

Client: Medline International GmbH

Location: Germany

- Solar irradiation and yield assessment, technical design
- COD tendering and supervision
- Commissioning and acceptance report
- Performance controlling





PV Integration into existing Energy System

PV	DESCRIPTION	
ACTIVITIES		
Development	Expert in charge:	Tatjana Pauling Dr. M. Eichelbrönnner
Engineering	Target/ project:	PV integration
Tendering	Period:	Nov. 2022 – present
Implementation	Client:	German gravel plant
Due Diligence	Location:	Germany
Transaction	Volume:	confidential
Finance Support	Size/Capacity:	6 MWp
Management	<ul style="list-style-type: none"> ▪ Modelling the impact of PV supply on operating existing energy plants, including 6 biofuel CHP plants (ca. 2 MWe) ▪ Energy balances on annual and daily basis ▪ Economic optimization of plant operation ▪ Solutions for adapted CHP plant operation and process heating 	
Operation		
Audit / Appraisal		
<ul style="list-style-type: none"> ▪ Advisory 		
Restructuring		






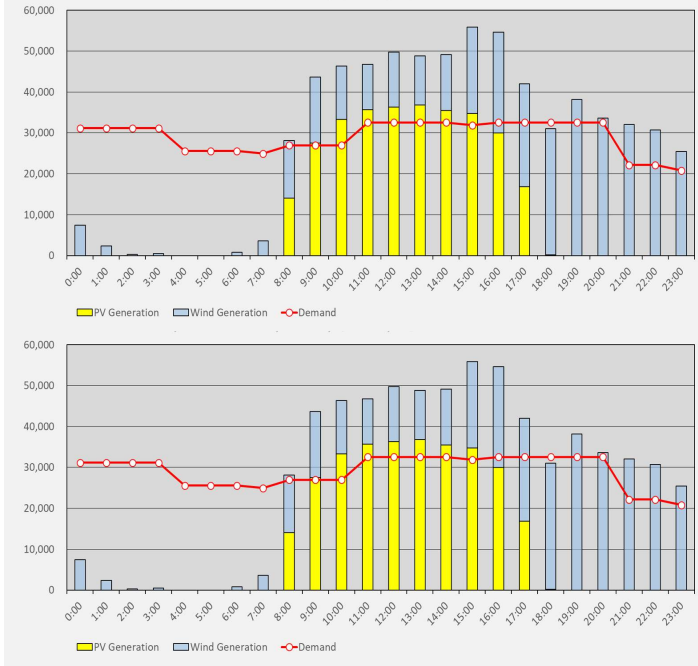
PV Concept

PV	DESCRIPTION	
ACTIVITIES		
Development	Expert in charge:	Tatjana Pauling
Engineering		Dr. M. Eichelbrönner
Tendering	Target/ project:	PV concept
Implementation	Period:	July 2022 – present
Due Diligence	Client:	German school
Transaction	Location:	Germany
Finance Support	Volume:	confidential
Management	Size/Capacity:	max. 2.5 MWp
Operation		
Audit / Appraisal		
■ Advisory		<ul style="list-style-type: none"> ■ Evaluation of total PV potential for the site ■ Analysis of PV impact on existing CHP plant operation ■ Energy balances and economic analysis ■ PV implementation concept
Restructuring		





Simulation of Photovoltaic and Wind Power to support Cement Factory, Pakistan

RENEWABLES	DESCRIPTION	
ACTIVITIES		
Development	Experts in charge:	Dr. M. Eichelbrönnner, Oliver Franz
Engineering	Target/ project:	Cement factory
Tendering	Period:	2021
Implementation	Client:	IB Vogt GmbH
Due Diligence	Location:	Pakistan
Transaction	Volume:	Not specified
Finance Support	Size/Capacity:	50 MW PV / 50 MW Wind
Management	<ul style="list-style-type: none"> Optimal Photovoltaic and Wind Power ratio to support a cement factory Variations from 10 to 100 MW, each photovoltaic power and wind power Result 40 MW photovoltaic and 10 MW wind power shows a quite optimal size 	
Operation		
Audit / Appraisal		
<ul style="list-style-type: none"> Advisory 		
Restructuring		



Asset Management

Wind

Solar

Bioenergie

Sonstige

TÄTIGKEITEN

Entwicklung

Planung / Engineering

Ausschreibung

Errichtung

Due Diligence

Transaktion

Finanzierung

Management

Betrieb

Audit / Gutachten

Beratung

Restrukturierung

PROJEKTbeschreibung

Personen: Dr. Eichelbröner

Gegenstand: PV Projektpipeline

Zeitraum: Mai 2006 bis Dez 2009

Auftraggeber: PV Modulhersteller, USA

Standort: Brandenburg, Deutschland

Volumen: 600 Mio. EUR

Kenndaten: 500 MWp



- Aufbau einer Projektpipeline zur Absatzsicherung einer PV Modulfabrik
- Abschluss von 500 MWp Verkaufsverträgen für Solarmodule
- Verhandlung der Performanceversicherung, Unterstützung für Projektfinanzierung
- Bau eines 110 kV Umspannwerks für einen 40 MWp Solarpark



PV Monitoring System, Malaysia

Asset Portfolio

Wind

Solar

Bioenergy

Others

Activities

- Development
- Engineering
- Tendering
- Construction
- Due Diligence
- Transaction
- Financing
- Management
- Operations
- Expert's Report
- Consulting
- Restructuring

PROJECT DESCRIPTION

Individuals: Dr. Eichelbröner
 Partner: SSM Associates, TÜV Rheinland
 Purpose: National PV monitoring programme
 Period: Since March – August 2016
 Assignment: SEDA of Malaysia
 Country: Malaysia
 Volume: n.a.



- Site evaluations for installation of metering devices
- Definition of evaluation and metering hardware
- Definition of software for data processing and plant monitoring





Photovoltaic Thin-Film Modules Manufacturing Plants

Asset Portfolio	Wind	Solar	Bioenergy	Others
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Activities
Development
Engineering
Tendering
Construction
Due Diligence
Transaction
Financing
Management
Operations
Expert's Report
Consulting
Restructuring

Project Description

Individuals: Dr. Eichelbrönner
Purpose: PV Thin Film Plant
Period: May 2006 bis Dec 2010
Investor: PV manufacturer, USA
Location: Brandenburg, Germany
 Robbinsville, NJ, USA
Volume: 120 Mio. EUR
Key Data: 30 + 20 MW p.a. capacity



- Application engineering for thin-film modules
- Thin-film modules quality control
- Thin-film modules IEC certification process
- Back-up performance insurance for module sales contracts



Insurability and Bankability of Photovoltaic Module Manufacturing Line, Germany, USA

PHOTOVOLTAIC	DESCRIPTION	
ACTIVITIES		
Development	Expert in charge:	Dr. M. Eichelbrönner
Engineering	Target/ project:	Insurability and Bankability of Photovoltaic Module Manufacturing Line
Tendering	Period:	2009
Implementation	Client:	EPV Solar GmbH EPV Solar Inc., USA
■ Due Diligence	Location:	Germany
Transaction	<ul style="list-style-type: none"> ▪ Execution of insurance due diligence of a PV module manufacturing plant ▪ Prove of quality control at ISO standards of module manufacturing ▪ Insurance cover to issue 20 years of manufacturer’s performance warranty 	
Finance Support		
Management		
Operation		
Audit / Appraisal		
■ Advisory		
Restructuring		





ASEAN Guidelines Photovoltaic, Malaysia

Asset Management	Wind	Solar	Bio-energy	Others
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Activities
Development
Engineering
Tendering
Construction
Due Diligence
Transaction
Financing
Management
Operations
Expert's Report
Consulting
Restructuring

PROJECT DESCRIPTION	
Contact:	Dr. Eichelbröner
Objective:	Photovoltaic
Period:	Dec 2013 - 2016
Assignment:	GIZ
Location:	Malaysia
Volume:	n. A.
Data:	n. A.
	
<ul style="list-style-type: none"> • http://aseanrenewables.info/wp-content/uploads/2016/09/RE-Guidelines-on-Solar-PV-Small-Malaysia_Sept-2016.pdf • http://aseanrenewables.info/wp-content/uploads/2016/09/RE-Guidelines-on-Solar-PV-Large-Malaysia_Sept-2016.pdf • International consultant for technical and economic content; Large and small Solar PV Project Development • International consultant for structure and key targets 	



ASEAN Guidelines Photovoltaic, Philippines

Asset Management	Wind	Solar	Bio-energy	Others
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Activities

- Development
- Engineering
- Tendering
- Construction
- Due Diligence
- Transaction
- Financing
- Management
- Operations
- Expert's Report
- Consulting
- Restructuring

PROJECT DESCRIPTION

Contact: Dr. Eichelbröner
 Objective: Photovoltaic
 Period: Dec 2013 - 2016
 Assignment: GIZ
 Location: Philippines
 Volume: n. A.
 Data: n. A.



- http://aseanrenewables.info/wp-content/uploads/2014/10/E-Guidebook-Large-Solar-PV_PH_for-publish_highres.pdf
http://aseanrenewables.info/wp-content/uploads/2014/10/E-Guidebook_Small-Solar-PV-for-PH_for-publish_highres.pdf
- International consultant for technical and economic content; Large and small Solar PV Project Development
- International consultant for structure and key targets



Internet Tool Photovoltaic Utility Scale

Asset Portfolio	Wind	Solar	Bioenergy	Others
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Activities

- Development
- Engineering
- Tendering
- Construction
- Due Diligence
- Transaction
- Financing
- Management
- Operations
- Expert's Report
- Consulting
- Restructuring

PROJEKTbeschreibung

Individuals: Dr. Eichelbröner
 Purpose: Solar Guidelines
 Period: 2011 - 2014
 Assignment: GIZ
 Country: Indien
 Volume: --
 Technology: PV and CSP



- Development and design of an Internet based platform
- Funding by German Ministry of Environment in collaboration with MNRE, India
- Analysis of Project-Life-Cycle and Project Finance in India
- In cooperation with eclareon Berlin and local consultants in India