

Partnership workshop “Best of inutec German PV trainings and exercises”



Partnership Event

This workshop is intended for decision maker of solar companies and their teams. Also multiplier persons like architects, trade representatives will learn how to start and get commission with clean sun energy. The training is designed to empower the participants, allow them insights and make them successful in the design and use an infinite, clean and independent solar energy. This workshop aims to **transfer the experience and knowledge in PV gained from the global leader Germany.**

At the second day there will be for around 4 hours a **Partnership Session**. This is specially created for the decision makers who are able to decide about cooperation with many advantages. Multiplier Persons will learn how to support renewable solar energy and make some extra money. Grab this unique opportunity to join and gain all the advantages!

Let's create the future!



REQUIREMENTS

Passion for solar. This workshop is for anyone seeking ways to grow or set up their solar business fast without costly mistakes. Specialty for entrepreneurs, decision makers, company owners and their team. Also if you want to start with PV business and make some extra money.



INSTRUCTOR

CEO/Dipl.-Ing. Environment techniques
Authorized Expert for Photovoltaic Equipment (TÜV)

Alexander Kaub



Partnership Session

We are looking for a limited number of Partner Companies and Multiplier Persons in Indonesia. With them we will share our clients and projects, products and prices, also our knowledge and more. Grab the opportunity and join the partnership session at the second day!



Course Fee

instead of IDR 5,500,000 per participant

Partnership Promo: only IDR 3,450,000 per participant, inclusive certificate and food.



LOCATION/DURATION

Surabaya, April 21th - 23th 2015
at Ekonid Office Surabaya
Wisma Jerman Function Hall

BRING YOUR LAPTOP AND CHARGER!



Perkumpulan Ekonomi Indonesia-Jerman
Deutsch-Indonesische Industrie- und Handelskammer
German-Indonesian Chamber of Industry and Commerce



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Partnership workshop “Best of inutec German PV trainings and exercises”

In 3 days, you will work out about:

Day One

1. why solar energy?

- facts, pros and cons of PV

2. sunlight becomes electricity

- design and calculation fundamentals
- performance and yield, global radiation, the technical units
- diffuse and direct radiation, radiation maps and data
- daily insolation, peak sun hours, azimuth and tilt angle
- Group tasks: Knowledge transfer to the practice

3. electrical basics to understand the correlations

- electrical basics, current, voltage, electric power, yield, series or parallel circuits for PV-cells/ modules
- standard test conditions (STC),
- practical exercises (individual and in small groups)

4. solar modules and their properties

- module technology types & characteristic values
- guaranty, quality, testing criteria, module comparison, aging mechanism,

5. inverters and their properties

- inverter types, inverter concepts, MPP-Tracking
- aging mechanism
- Group tasks: Knowledge transfer to the practice

6. On- and Off-Grid Systems and their properties

- the most cost effective systems and solutions
- grid parallel-, net metering-, back up-, stand-alone solutions
- costs- and returns, ROI, financial analyzes
- practical exercise: net metering, fuel saver and on grid feed in

Day Two

7. shading

- technical background, practical examples and impacts
- measurement and yield forecast, possible solutions
- exercise: minimize the effect of shadows

8. some principals about the installation of PV arrays

- overview, installation rules
- first design roles roof, free field and modules and inverter

Partnership Session

- presentation of the partnership scheme and its possibilities
- decision maker consultation and agreement

Day Two and Three

9. designing PV arrays

- place your system on the roof and free field, rows, row distance, security distances
- choose the right inverter facing technical and financial aspects
- DC cabling, strings, MPP Tracking, cross section, string plan
- bill of material, quotation and Pay Back Period
- design a Stand Alone system in a glance: daily energy demand, PV Generator, Batteries, inverter charger
- design a Back-UP system in a glance: energy demand, modules, battery, inverter charger

During this session you will learn the design fundamentals without using software. Then we will use some helpful free software tools but also the and the world leading PV design and analyze software PV-SOL Premium 7.0. BRING YOUR LAPTOP AND CHARGER!

10. certificate award



Alexander Kaub, founder and lecturer of **The Academy and inutec** is working successfully for the last 20 years in the field of solar photovoltaic (PV) energy. With his company inutec solarcenter he is a true pioneer who has taken part in all aspects of the solar market. From 2008, 2009 and 2010 his company generated every year around 18 million USD turn-over in Germany. He has impressive experience in designing, planning, installation, training, the growing solar market and operating a business. In 2013 he attended 12 seminars about the latest PV knowledge in Germany to be up to date. He is an Authorized Expert for Photovoltaic Equipment (TÜV).



Venue:

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Surabaya

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