

# dena RES Programme

## dena Renewable Energy Solutions Programme

On-site visit dena RES project India/Chennai, 15-17 November, 2017

[www.dena.de/en](http://www.dena.de/en)

Supported by:



on the basis of a decision  
by the German Bundestag

# German Energy Agency

## Deutsche Energie-Agentur GmbH (dena)

[www.dena.de/en](http://www.dena.de/en)

Supported by:



on the basis of a decision  
by the German Bundestag

## DENA RENEWABLE ENERGY SOLUTIONS PROGRAMME

# We're making the energy transition happen

- **Centre of Expertise**  
for energy efficiency, renewable energy sources and intelligent energy systems
- **Intermediary**  
between politics, industry and science
- **Serves multiple ministries**  
and is in constant dialogue with market stakeholders
- **With clear objectives:**  
Support for the Federal Government in its energy policy strategy  
Communication focusing on issues concerning end users and suppliers  
Realisation of energy efficiency and renewable energy potential, including system integration

# DENA RENEWABLE ENERGY SOLUTIONS PROGRAMME

## dena's management and shareholders

- **Management**

Andreas Kuhlmann (Chief Executive)

Kristina Haverkamp

- **Federal Republic of Germany**

represented by the Federal Ministry of Economic Affairs and Energy,

**in consultation with:**

Federal Ministry of Food and Agriculture

Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety

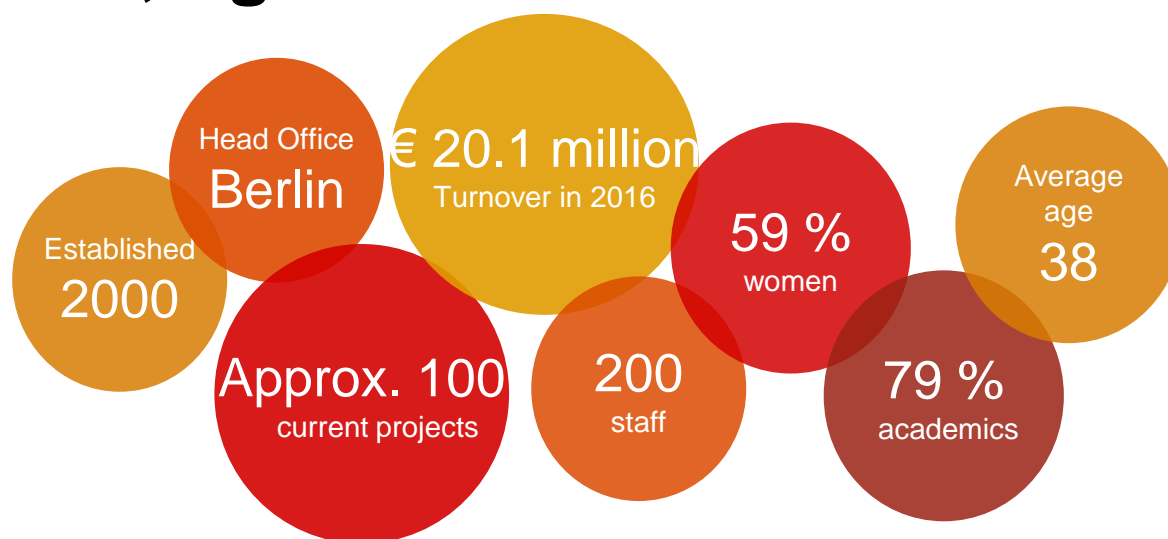
Federal Ministry of Transport and Digital Infrastructure

- **Financial Service Providers**

KfW Group

# DENA RENEWABLE ENERGY SOLUTIONS PROGRAMME

## Facts, figures and dates



### dena in dialogue in 2016:

- 6.5 million page visits on dena websites
- Distribution of 225,000 publications
- Over 3,400 printed articles and around 1,100 articles in online media
- Around 4,800 visitors to dena events

# DENA RENEWABLE ENERGY SOLUTIONS PROGRAMME

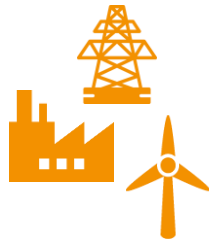
## Our four pillars

### ENERGY EFFICIENCY



Think tank and  
moderator for the  
establishment of  
the energy  
transition

### INTELLIGENT ENERGY SYSTEMS



Integration,  
optimisation and  
think tank

### STAKEHOLDER PROCESSES



Moderator at the  
interface between  
politics, commerce  
and society

### INTERNATIONAL ACTIVITIES



Marketing the  
energy transition  
abroad

# dena RES Programme

## Objectives, Stakeholders, Implementation

[www.dena.de/en](http://www.dena.de/en)

Supported by:



on the basis of a decision  
by the German Bundestag

# DENA RENEWABLE ENERGY SOLUTIONS PROGRAMME

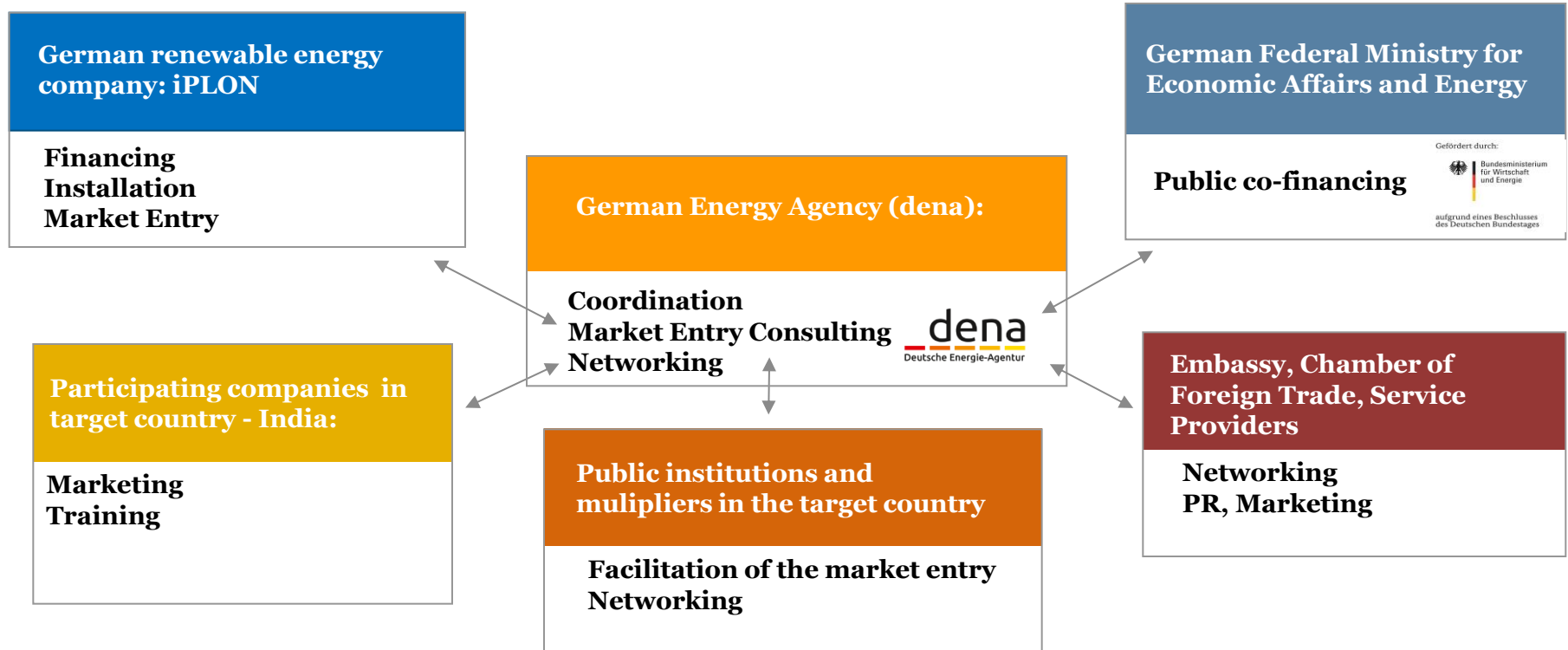
## Objectives

- Initiate cooperations between German and foreign experts
- Exchange knowledge of the applications, technology and costs of renewable energy technology
- Generate local added value in the field of distribution, installation and maintenance
- Develop education and qualification on specific technologies



# DENA RENEWABLE ENERGY SOLUTIONS PROGRAMME

## Key Stakeholders



# DENA RENEWABLE ENERGY SOLUTIONS PROGRAMME

## Realisation part 1 - technology

- Licensing procedures
- Installation of components
- Certification
- Training of the institution's staff



# DENA RENEWABLE ENERGY SOLUTIONS PROGRAMME

## Realisation part 2 – marketing/training

- Press conferences
- Project inauguration
- Congresses, symposiums and events
- Seminars



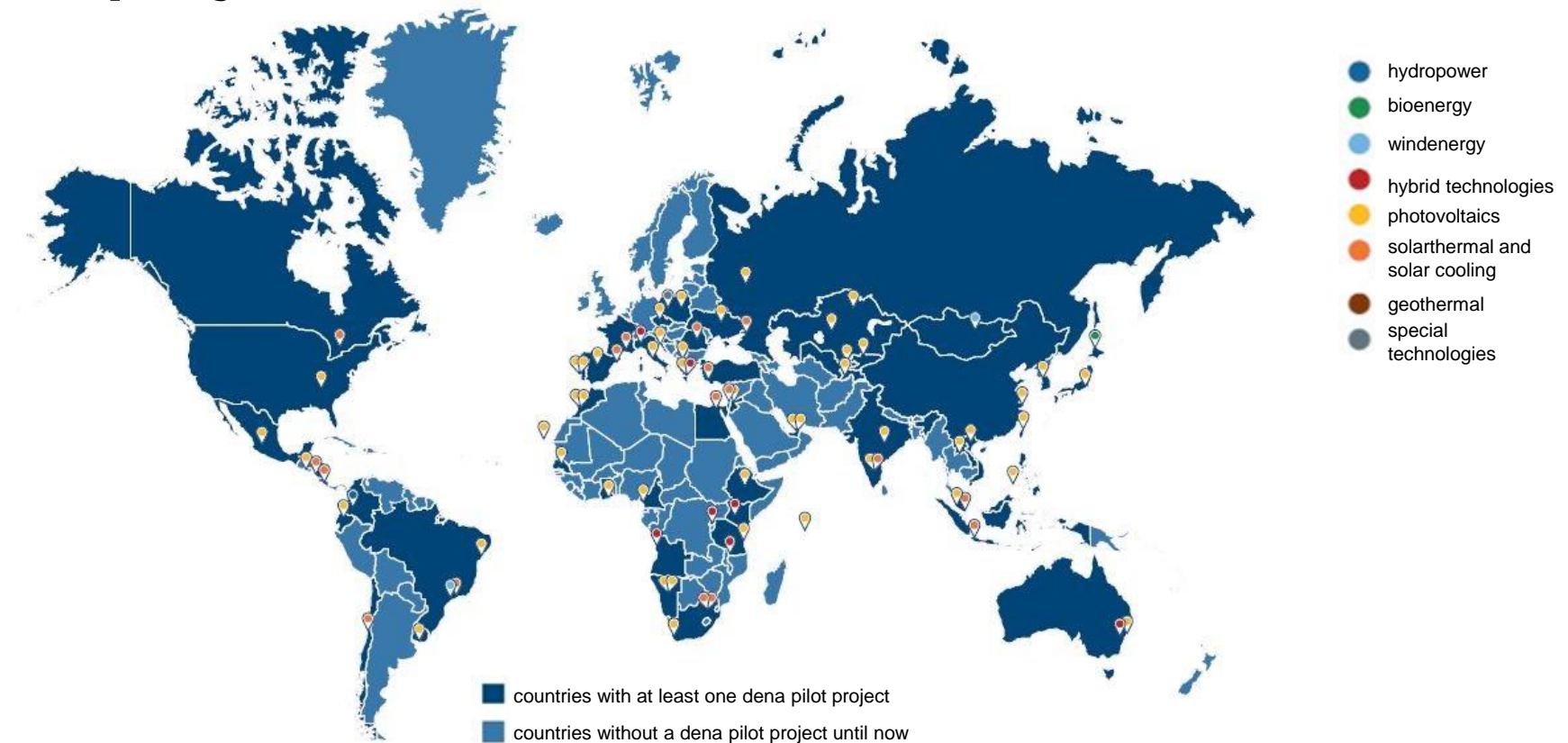
## DENA RENEWABLE ENERGY SOLUTIONS PROGRAMME

### Outcome: win-win situation

For the institutions	For the company
Contribution and co-financing of high-quality reference technologies	Realisation and co-financing of high-quality reference technologies
Image strengthening and awareness raising	Image strengthening and awareness raising
Increase of property value	Fast, professional market entry
Use of renewable energy technology also for pedagogical purposes	Ability to display a concrete example of technology
Minimisation of energy costs, increase of independence from traditional energy sources	Access to important institutions in the target countries

# DENA RENEWABLE ENERGY SOLUTIONS PROGRAMME

## 75 projects in 58 countries



# DENA RENEWABLE ENERGY SOLUTIONS PROGRAMME

## Partners

**SCHOTT**  
solar



**abakus**  
solar AG

**YANDALUX** 

**PHÖNIX**   
SonnenWärme AG



**VISSOLIS**  
... the power of the sun

**HEOS**  
ENERGY GmbH

**K A C O**  
GERÄTETECHNIK

**IBC**  
SOLAR

**mp|tec**

**SOLAR 23** 

**SMA**  
SOLAR TECHNOLOGY

**PRETHERM**  
SOLUTIONS

**BAE**  
Energy from Batteries

**RID**

**SMART  
HYDRO  
POWER**

**nolting**   
Holzfeuerungstechnik



**BOSCH**

**Ferrostaal**

**steca**

**SCHÜCO**



## DENA-RENEWABLE-ENERGY-SOLUTIONS-PROGRAMM

### Project PV renting, South Africa

- maxx-solar & energie GmbH & Co. KG
- Location: Cape Town – Dominican Grimley School and Atlantic Gold Guesthouse
- Grid-connected PV-systems with a total of approx. 36 kWp
- PV renting concept: Overcoming the financial barriers in South Africa
- Inauguration: May 2016
- Integration in maxx-solar academy



## DENA-RENEWABLE-ENERGY-SOLUTIONS-PROGRAMM

### PV with battery storage in Windhoek, Namibia

- deea solutions GmbH in Cooperation with Terrawatt Planungsgesellschaft mbH
- „Little Home“ - guesthouse of the Namibia University of Science and Technology
- PV-system 15,08 kWp inkl. battery storage
- Inauguration: October 2016
- The solar power is mostly consumed in the Little Home. Surplus is stored or fed into the grid. In the event of a power failure, the system operates as a microgrid





## DENA-RENEWABLE-ENERGY-SOLUTIONS-PROGRAMM

### Virtual power plant for Poland

- Energy2market GmbH
- Location: Poland
- Decentralised power generators were combined and controlled by a software solution and a control room.
- Inauguration: October 2016, On the occasion of the integration of a biogas plant into the VPP
- Good market chances through the Polish Energy Act, which entered into force on 1 July 2016 and introduces direct marketing requirements



## DENA-RENEWABLE-ENERGY-SOLUTIONS-PROGRAMM

### Off-grid applications in Kenya

- SUNSET Energietechnik GmbH
- Location: Ol Pejeta Bush Camp, Laikipia
- Solar pump for water supply, plus solar thermal water supply
- Minigrid PV system including battery system.  
Solar wind hybrid system including 12 volt LED lighting.
- Inauguration: October 2016
- Project demonstrates the variety of off-grid applications



## DENA-RENEWABLE-ENERGY-SOLUTIONS-PROGRAMM

# PV diesel hybrid system with battery, Chile

- Kraftwerk RPS GmbH & energie GmbH & QINOUS GmbH
- Location: Tierra Hotel, Atacama-Desert
- PV diesel hybrid system with 133 kWp & 330 kWh lithium-ion battery storage
- Inauguration: October 2017



## DENA-RENEWABLE-ENERGY-SOLUTIONS-PROGRAMM

# Small hydropower for Colombia's agriculture

- Smart Hydro Power GmbH
- Location: region Neiva along the river Magdalena
- Hydrokinetic turbine with a power of 5kW nominal supplemented by a PV system
- Replaces the diesel used to operate the irrigation pumps for the rice fields
- Inauguration: July 2015
- Other potential clients were offered lectures, workshops and a webinar





## DENA-RENEWABLE-ENERGY-SOLUTIONS-PROGRAMM

# Autonomous power supply in Mongolia

- HEOS Energy GmbH
- Location: training center of the Mongolian University of Life Sciences (MULS) in Nart Töv
- Hybrid system consisting of a small wind turbine, a PV system, a battery system and an emergency power unit
- Inauguration: June 2015
- Sustainable: The transport container is now a substructure for the control container and at the same time serves for storage and workshops



## DENA RENEWABLE ENERGY SOLUTIONS PROGRAMME

### dena RES programme 2017/2019

#### dena RES project India / Chennai

Implementation	2018
Market	India / Tamil Nadu
Technology	Photovoltaics / e-mobility
Hosted by	iPlon India, Indo-German Chamber Chennai

# DENA RENEWABLE ENERGY SOLUTIONS PROGRAMME

## Schedule

Milestone	Date
On-Site Meeting	November 2017
Transport/Customs	2018
Installation	2018
Inauguration	4th quarter 2018

# THANK YOU!

## Deutsche Energie –Agentur GmbH (dena)

Felix Schmid  
Senior Expert, International Pilot Projects  
Renewable Energies and Mobility  
Chausseestr. 128a  
10115 Berlin / Germany  
Tel.: +49 (0)30 66 777– 606  
Email: [schmid@dena.de](mailto:schmid@dena.de)  
[www.dena.de](http://www.dena.de)

Itta Olaj  
Expert, International Pilot Projects  
Renewable Energies and Mobility  
Chausseestr. 128a  
10115 Berlin / Germany  
Tel: +49 (0)30 72 61 65 – 858  
Email: [olaj@dena.de](mailto:olaj@dena.de)  
[www.dena.de](http://www.dena.de)

[www.dena.de/en](http://www.dena.de/en)

Supported by:



on the basis of a decision  
by the German Bundestag