

# **Indo-German Lighthouse Project Setting up an Advanced Training Institute (ATI) for energy-efficient Construction in India**

Prepared by

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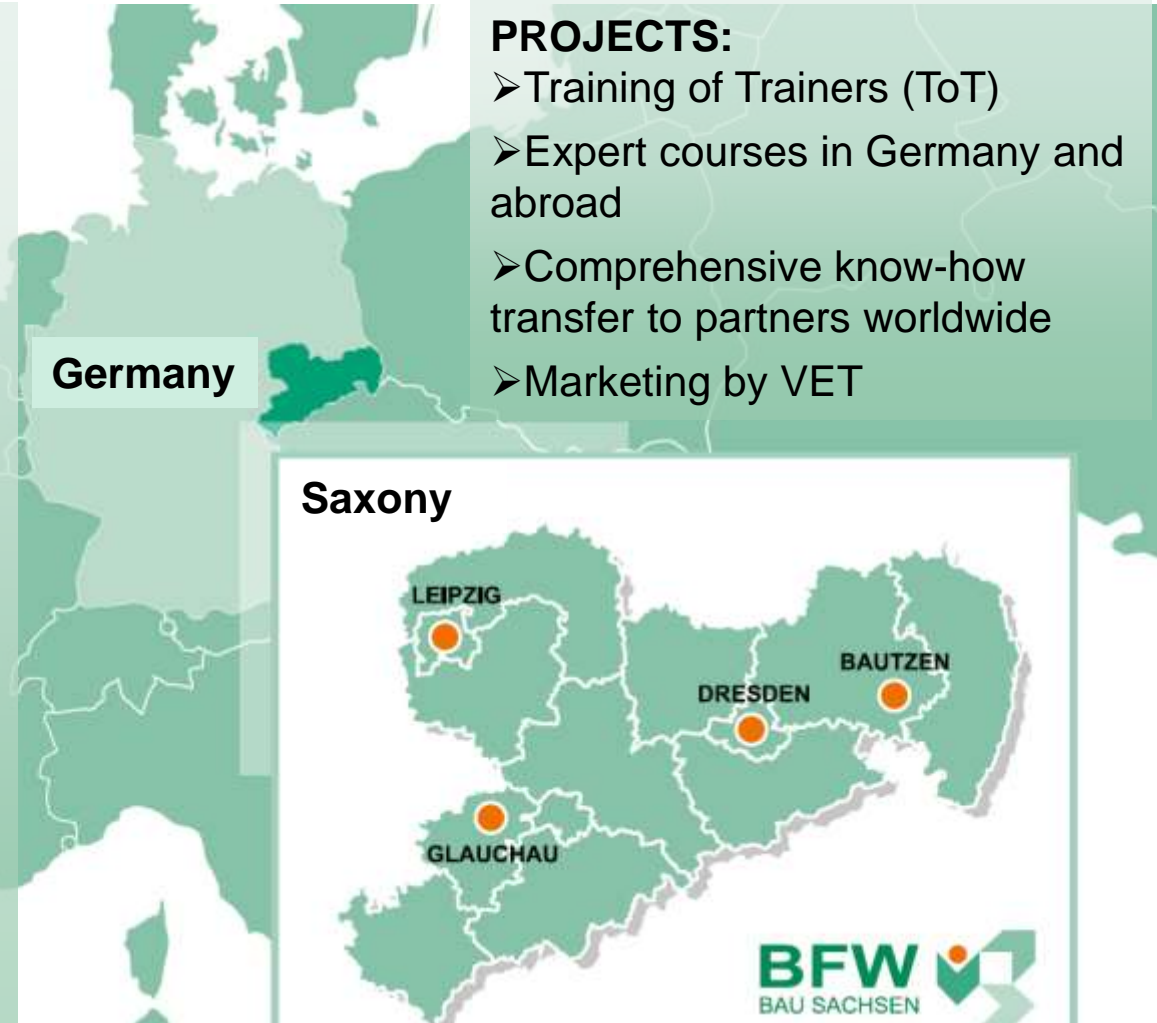
To be presented at the JWG Meeting, New Delhi, 2014-10-09

# IVET and CVET for the Construction Industry

- Registered in 1991
- Leading in Germany

## Focal points:

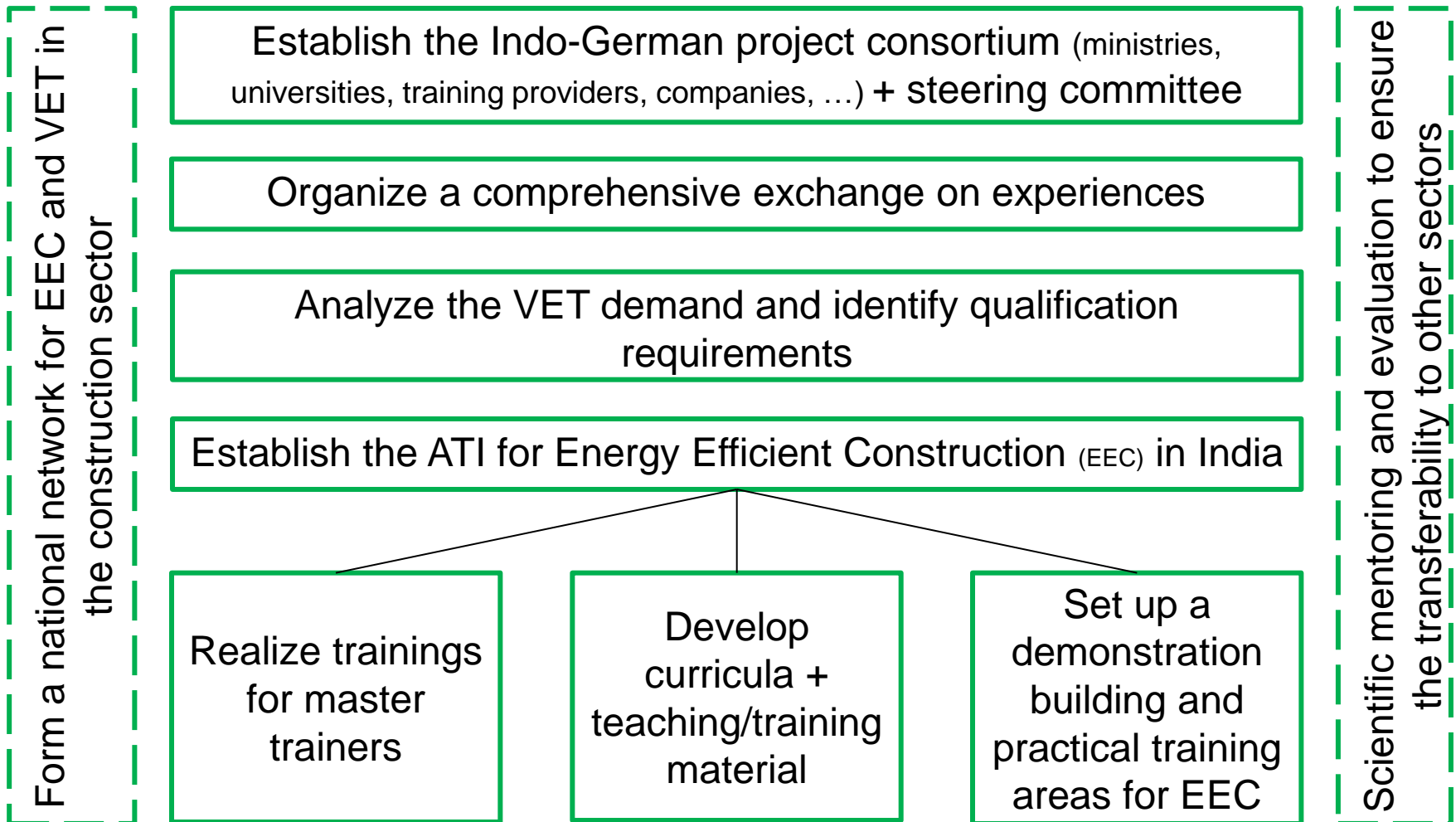
- Occupational orientation
- **IVET** for all occupations of the German construction sector (e. g. mason, carpenter, pipeline fitter, road builder, ...)
- Cooperative study courses (studies and trainings)
- **CVET** in competence centres for concrete, timber, pipeline and energy efficient construction + construction machinery
- Further training for the middle management on site
- Training courses for middle and high level managers



## **PROJECTS:**

- Training of Trainers (ToT)
- Expert courses in Germany and abroad
- Comprehensive know-how transfer to partners worldwide
- Marketing by VET

# Spring 2013 – concept note on an Indo-German lighthouse project

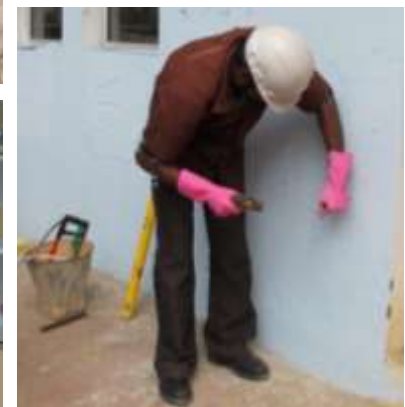


# July 2013, Indo-German JWG visits BFW training centre in Dresden



# February 2014, getting to know each other

First visit of BFW officials at National Academy of Construction in Hyderabad



## April/May 2014, exchange of experiences

Looking over the shoulder of trainers/demonstrators at NAC, introducing new concepts



**20 %**  
theory  
+  
**80 %**  
practice



# There is no „energy efficiency mason“

Increasing energy efficiency by increasing the quality of VET for the construction sector

Step 1

Increasing the quality of VET for existing occupations

Step 2

Anchoring the understanding that masons, carpenters etc. significantly increase the energy efficiency of buildings by:

- precise and high quality construction work
- the use of modern materials
- the knowledge of interfaces in the construction process

Step 3

Permanently adapting trainings according to:

- new construction materials
- new construction methods
- new construction tasks and processes/procedures


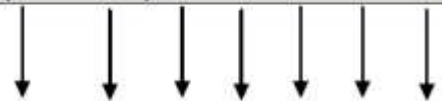
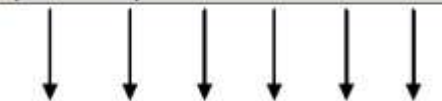
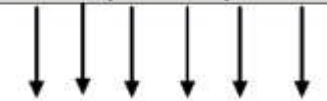
# VET – different objective levels

				DESIGN
				COMBINE
				ANALYSE AND SELECT
ADAPT (MODIFY)		ADAPT	ADAPT	ADAPT
COMPREHEND (REPRODUCE)	COMPREHEND	COMPREHEND	COMPREHEND	COMPREHEND
<b>Participants are able...</b>				
<b>... to reproduce given patterns of action.</b>	<b>... to adapt given or known patterns of action to the existing conditions.</b>	<b>... to select a suitable pattern of action from known patterns of action based on the existing conditions.</b>	<b>... to develop a combination of known patterns of action based on existing conditions.</b>	<b>... to design their own patterns of action.</b>
The participants reproduce the patterns of action move in precisely-determined patterns of thinking and action	The participants use the specified patterns of action always move within the preset patterns of thinking and acting	The participants select one pattern of action presented by the teacher always move within the preset patterns of thinking and acting	The participants fall back on known knowledge and skills, and combine given or known patterns of action into a suitable pattern of action with which the problem can be identified and/or solved	The participants act independently without help from the instructor acquire the knowledge and skills required for identifying and/or solving the problem and develop their own patterns of action



# VET - different occupations

Train master trainers to become generalists in 1 of 3 fields

<ul style="list-style-type: none"> <li>➤ Mason</li> <li>➤ Barbender</li> <li>➤ Scaffolder</li> <li>➤ Formwork carpenter</li> </ul>	<ul style="list-style-type: none"> <li>➤ Tyler</li> <li>➤ Plumbing and Sanitation</li> <li>➤ Electrical House wiring</li> </ul>	<ul style="list-style-type: none"> <li>➤ Land surveyer</li> <li>➤ Plumber</li> </ul>
		
<b>Building construction works (Hochbau)</b>	<b>Finishing + interior works (Ausbau)</b>	<b>Civil engineering works (Tiefbau)</b>
		
....	....	....

ATI-master trainers should (amongst others) be able to:

- Adapt basic modern pedagogic qualifications to all occupations in their area of expertise
- Adopt new contents to the trainings
- React flexibly if new occupations are defined

**18+ German occupations in the construction sector:**

### Building construction

- Skilled building construction worker
- Mason
- Concretor
- ...

### Civil engineering

- Skilled civil engineering worker
- Road construction worker
- Pipe fitter
- ...

### Finishing/Interior works

- Skilled interior/finishing construction worker
- Carpenter
- Plasterer
- ...

### others

- Construction equipment operator
- ...

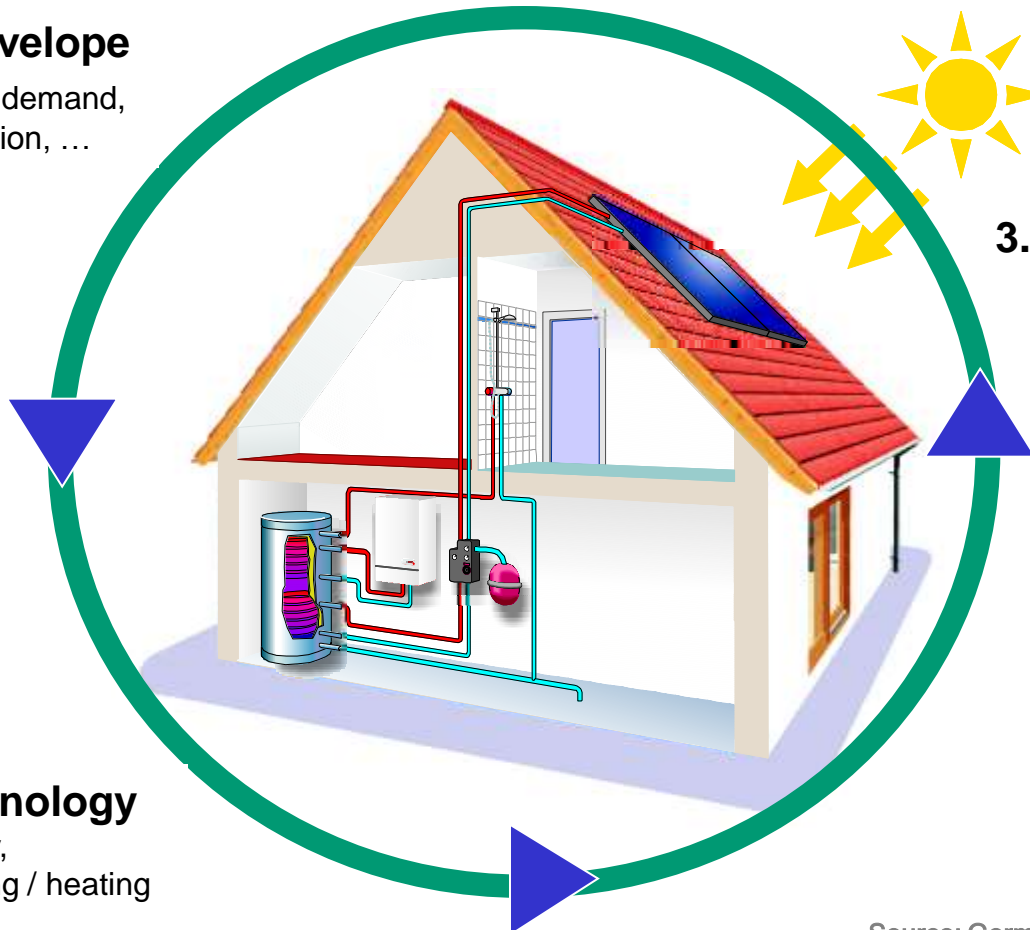
# Systematic building approach for sustainable construction: Energy efficiency + renewables

## 1. Building envelope

reducing energy demand,  
windows, insulation, ...

## 2. Building technology

efficient technology,  
air condition, cooling / heating

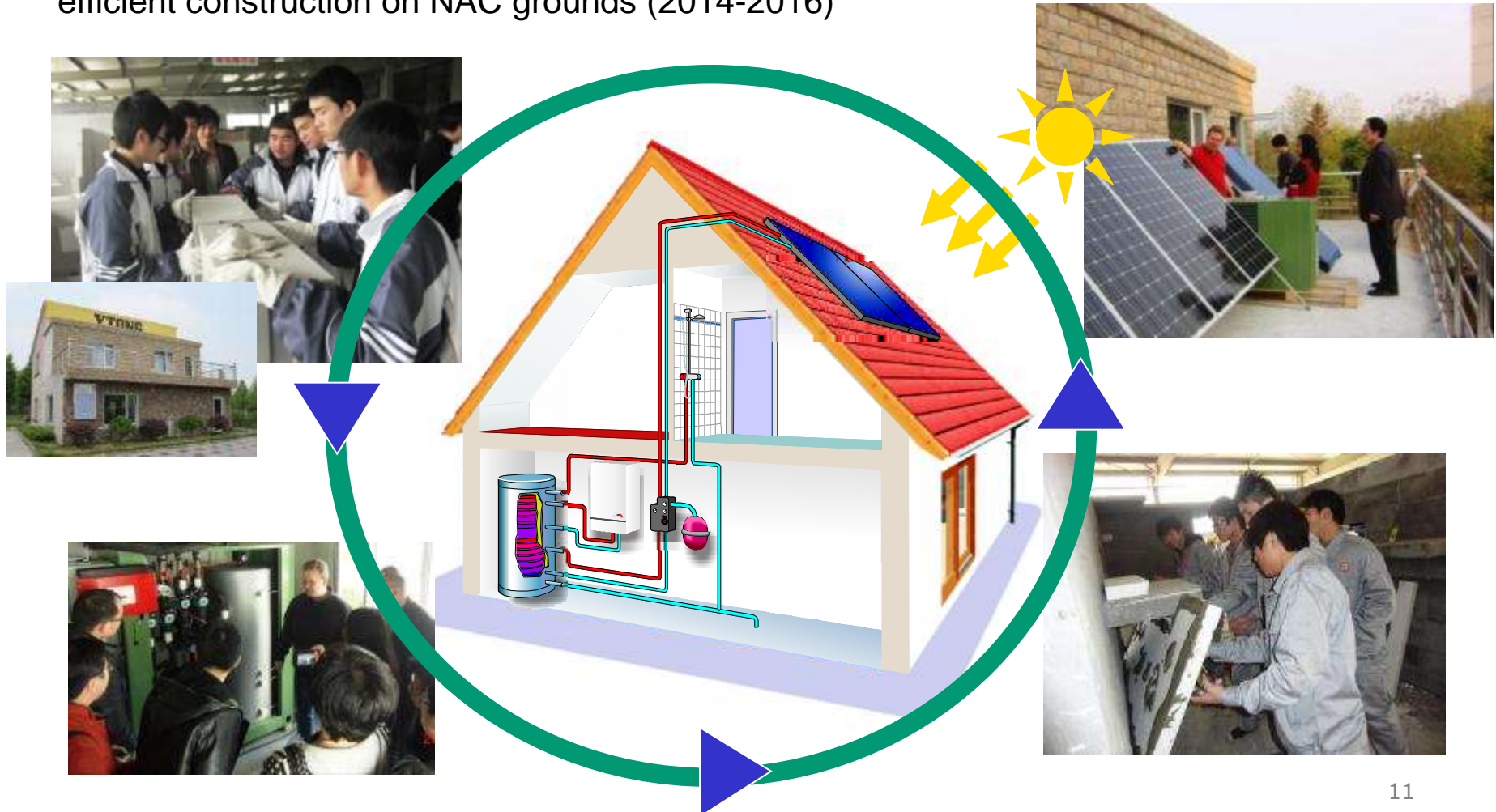


## 3. Renewables

- Photovoltaic
- Solar cooling/heating
- Wind power
- Geothermal energy
- ...

# Next steps - Set up a demonstration building and practical training areas for EEC

Planning and realization of a demonstration building and practical training areas for energy efficient construction on NAC grounds (2014-2016)



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# Construction needs education!

