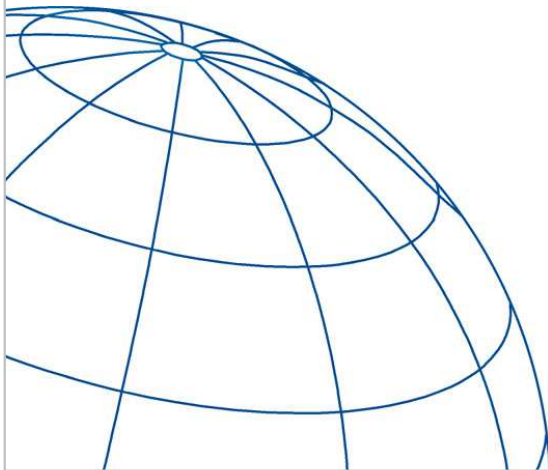


Supporting Iran in Implementation of an Integrated Energy Efficiency Market

Steering Committee Meeting / Kick-Off Meeting
Teheran, 21.11.2018

Dr. Achim Stuible



CONSULTING & IT

ENERGY

ENVIRONMENT

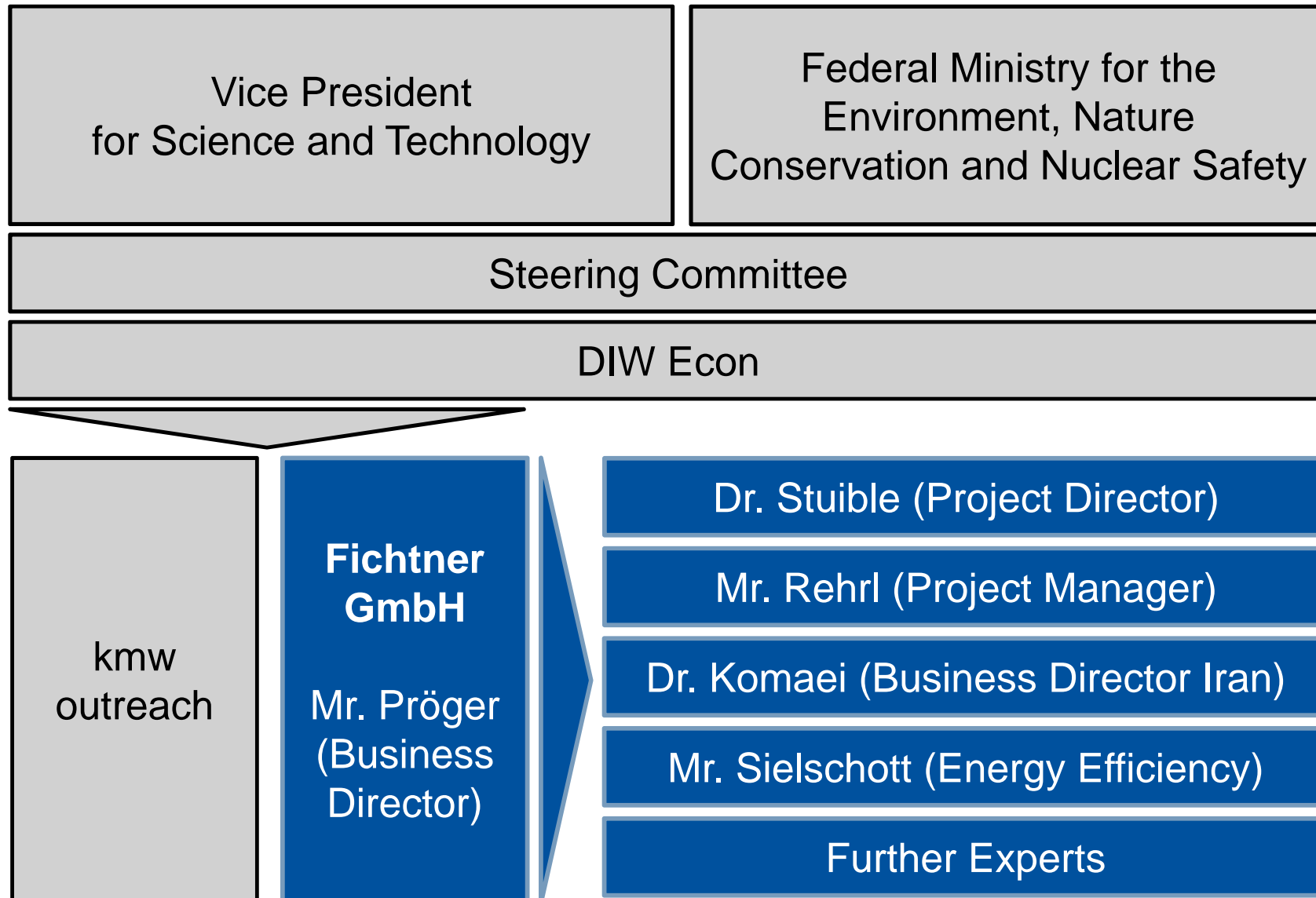
WATER & INFRASTRUCTURE

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1 Introduction

The Energy Efficiency Consultant for Rural Projects





2 Scope of Work

Scope of Work – Outputs Fichtner Package

Fichtner Package:

Development of pre-feasibility studies for potential energy efficiency projects in selected rural regions, which could be realized applying Article 12 under M3E

Indicators for the Fichtner Package

- **Indicator 1 – Pre-Feasibility Studies**
Pre-feasibility studies for potential energy efficiency projects in the selected rural regions, which are eligible under Article 12
- **Indicator 2 – Financing concepts**
Financing concept for energy efficiency projects applying Article 12 under M3E

Scope of Work – Activities under Fichtner's Package

- **Selection of pilot regions**
Selection of 3 pilot regions with potential to develop **rural EE projects** which could be feasible within M3E
- **Assessment of Status Quo**
Status Quo of EE potentials in 3 pilot regions with site visits and identification of potential project ideas
- **Walk-through audits**
Analyze and develop potential projects and assess expected energy savings
- **Pre-feasibility studies**
Pre-feasibility studies for potential M3E EE projects
- **Financing concepts**
Analysis of potential (M3E-)financing concepts for these EE projects



3 Preliminary Findings from first Mission to Kerman

Site Visit to Kerman (18. - 19.11.2018)

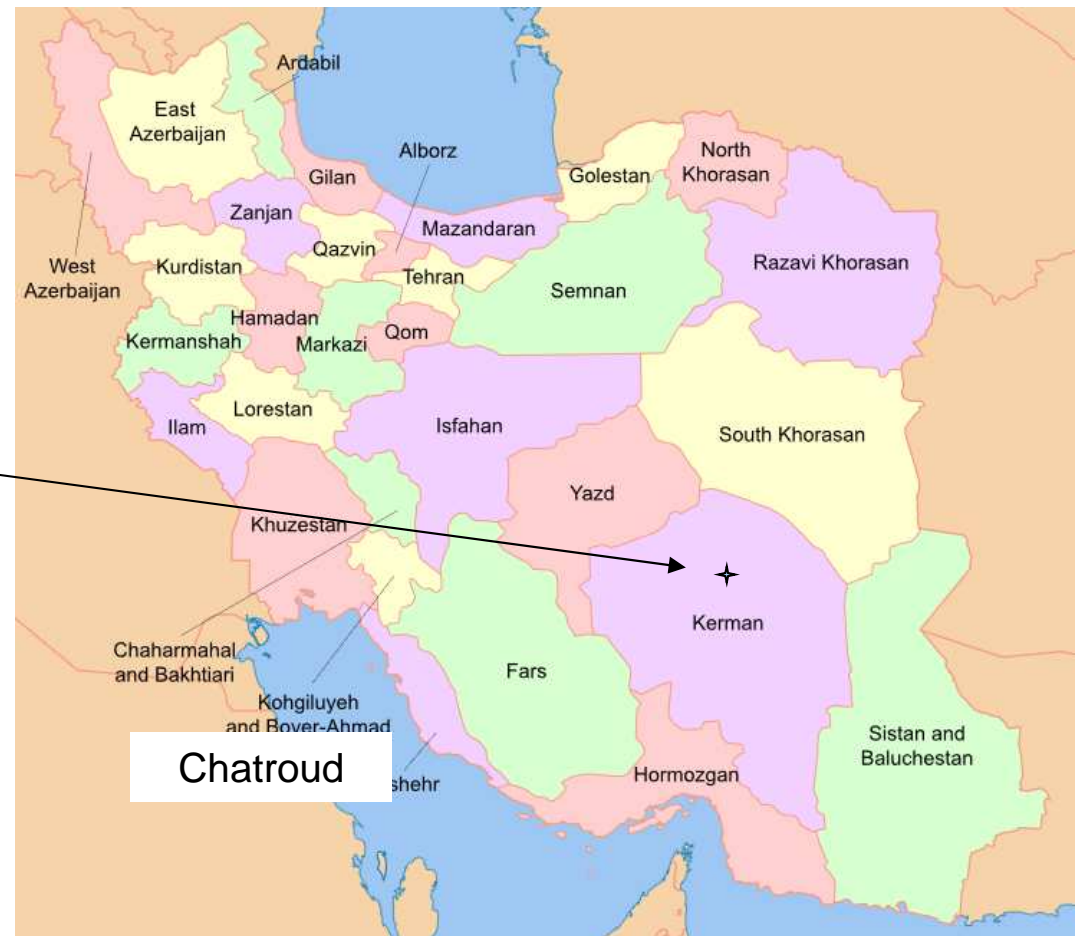


- Commitment to energy efficiency, environment and social responsibility of:
 - Governor of Kerman
 - Governor of Chatroud
 - Butia Iranian Steel Complex (BISCO)

Site Visit to Kerman

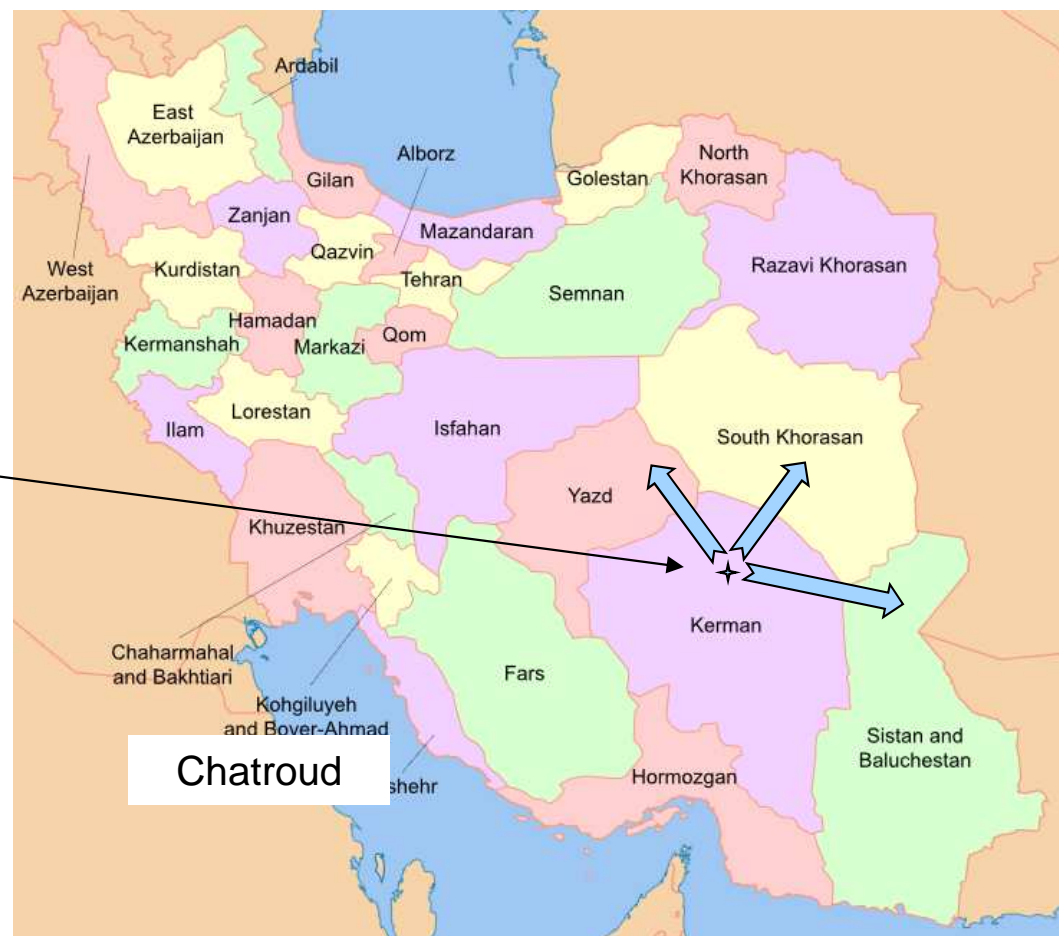
- Selected Pilot Rural Region: Chatroud (چترود)
 - Distance from Kerman City: 45km (NW)
 - Rural Population: 21'263 (2016)
 - Main Activity: Agriculture (66%)

➔ Familiarization with the region

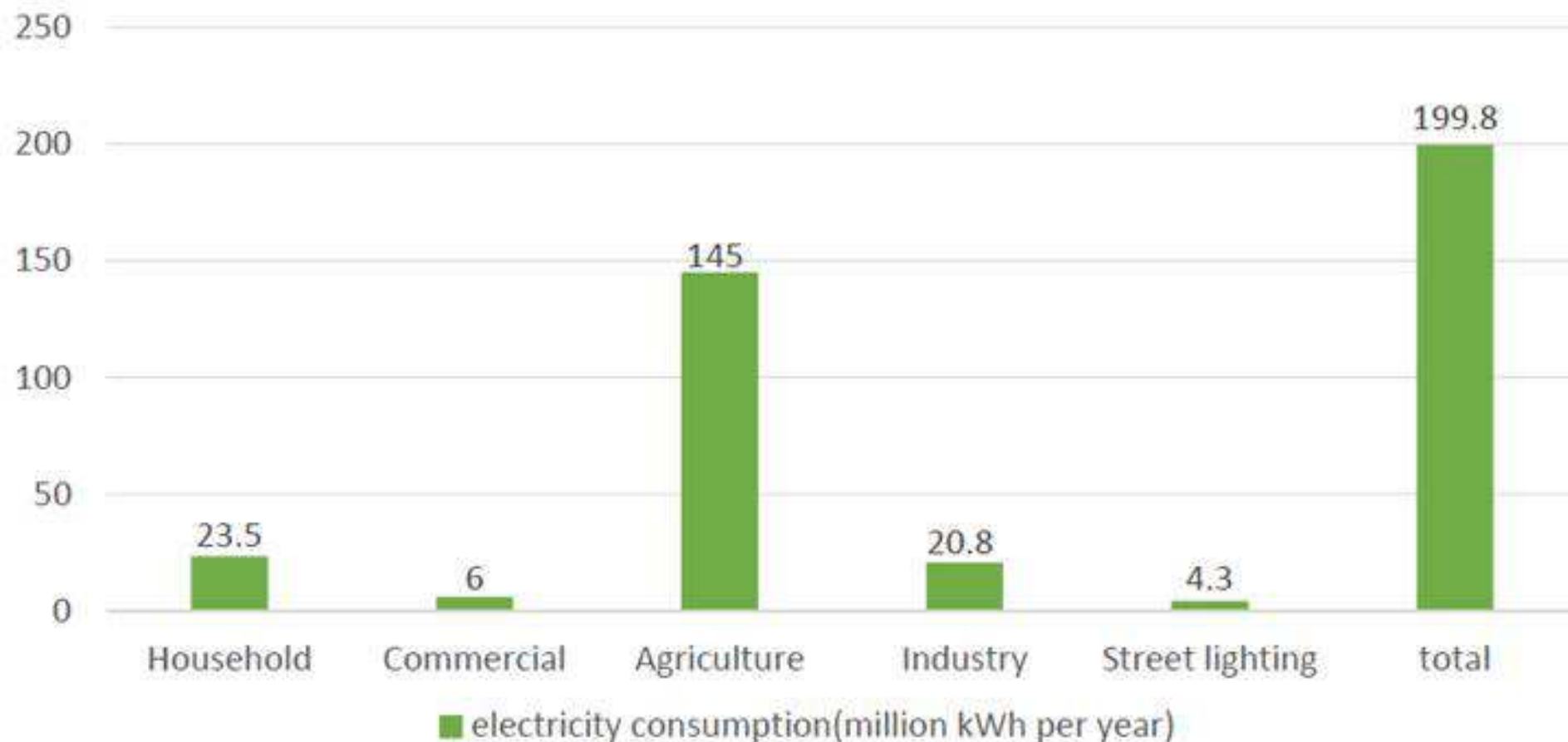


Site Visit to Kerman

- Why Chatroud (چترود)?
 - Similar Potential Rural Areas
 - Kerman
 - Yazd
 - South Khorasan
 - Sistan & Baluchistan
 - Investor available (Butia Steel Co.)



Electricity demand in Chatroud region in GWh/yr



- ➔ Agriculture consumes 75% of electricity
 - Mainly for water pumping

Time Schedule of Site Visit to Kerman

| Date | Place/Event | Location | Focus |
|--------------------|--|------------------------|--|
| 18.11.2018 | Kick-Off meeting | Bisco | High interest and support of Bisco & Kerman Governor |
| | Poultry Slaughterhouse | Zahmat-Keshan land | Sewage water |
| | Brick Production | Zahmat-Keshan land | Passage furnace |
| 19.11.2018 | Kerman Sewage Treatment Plant & Bisco's Pump House | Sharf-Abad | Water re-usage |
| | Resalat education complex | Kazem-Abad | Evaporation cooling – water consumption |
| | Events hall | Kazem-Abad | |
| | Pistachio farmland | Rahim-Abad | Underground and traditional irrigation |
| | Poultry farm | Tikdar | Heat recovery ? |
| | Ice making factory | Chatrood | Photovoltaic potential ? |
| | Pistachio processing factory | Houtk | Gas consumption for drying |
| Pistachio farmland | Sarasiab 6 | Pressurized irrigation | |

Preliminary Findings

Modern facilities

The visited facilities and buildings were relatively modern and adapted to local requirements.

➔ *Low energy saving potential*

Brick production

Batch production of bricks by natural gas fired ovens. Possibility to implement continuous oven.

➔ *Some energy saving potential*

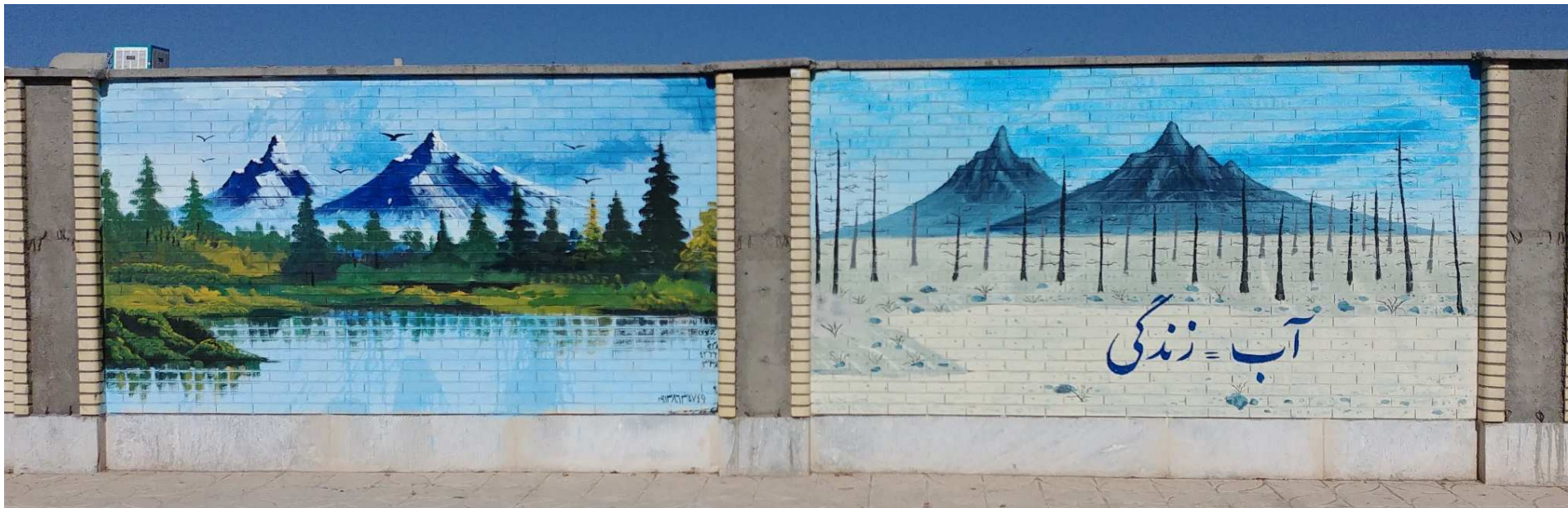
The shortage of water is the prevailing issue

Water shortage in the region (the same for some 70% of the territory of Iran) is the main problem in most of the visited potential projects.

➔ *Saving water results in saving energy and sustainable improvements for people in rural areas. To make them eligible a suitable baseline needs to be established.*

Preliminary Findings for Kerman (Chatroud)

*The ground water level decreases by more than **two meters every year**.
The current wells currently supply water from a depth larger than **200m**.*



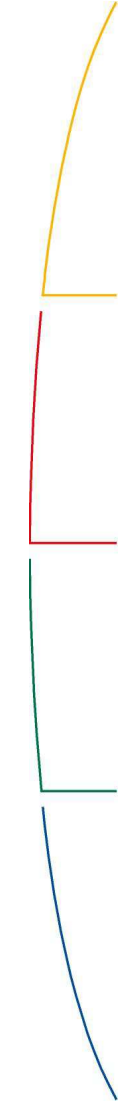
Picture taken at Resalat Education Complex in Kazem-Abad, Chatroud,
November 19th 2018

4 Next Steps

Next Steps

- Site Visits to other preselected regions (Shif Island in Bushehr Province, Maragheh region in East Azerbaijan Province)
- Questionnaire for energy consumption of Chatroud and/or selected cities and villages
- Specification / definition of “rural areas”
- Specification of minimum savings
 - To recover transaction costs (incl. monitoring)
 - In terms of energy (electricity, gas) and water
- General check of renewable energy projects for power generation in rural areas for own consumption
 - Photovoltaic
 - Hydro power
 - Etc.

Back Up



Profile Dr. Achim Stuible



1998-2000 *Institute for Energy Economics and the Rational Use of Energy, University of Stuttgart*

Project Engineer in the department Engineering Principles and Methods

since 2001 *Fichtner GmbH & Co. KG, Stuttgart*

Project Engineer within the business unit Energy Economy and Renewable Energies

since 2003 Deputy Department Head of Energy Economics

since 2012 Department Head of Energy Economics

- Evaluation of technologies and markets in Renewable Energies (several European countries)
- Head of engineering for audits for energy efficiency and the use of renewable energies in the industry in the framework of international credit lines (Moldova, Turkey, Balkan, Latin America),
- Energy efficiency audits in residential and public buildings (Bahamas, Montenegro)
- Certified energy auditor by the Federal Office of Foreign Affairs and Export Control
- CO2-savings in several industry branches (e.g. steel, paper, glass, etc.)

Year of birth: 1969

1997 University of Stuttgart, Germany. Degree of "Diplom-Ingenieur" in Air- and Space Technologies

2002 University of Stuttgart, Doctorate in Engineering. Methods for Simulation of Complex Energy Systems

Personal Data

Professional Experience

Specific Project Experience