



Country Strategy

Low Carbon Society & Green Economy



Goal :
GHG reduction in Energy Sector
=> less than 4 tons/person/year

Renewable Energy



Renewable energy potential

RE Potential

Natural

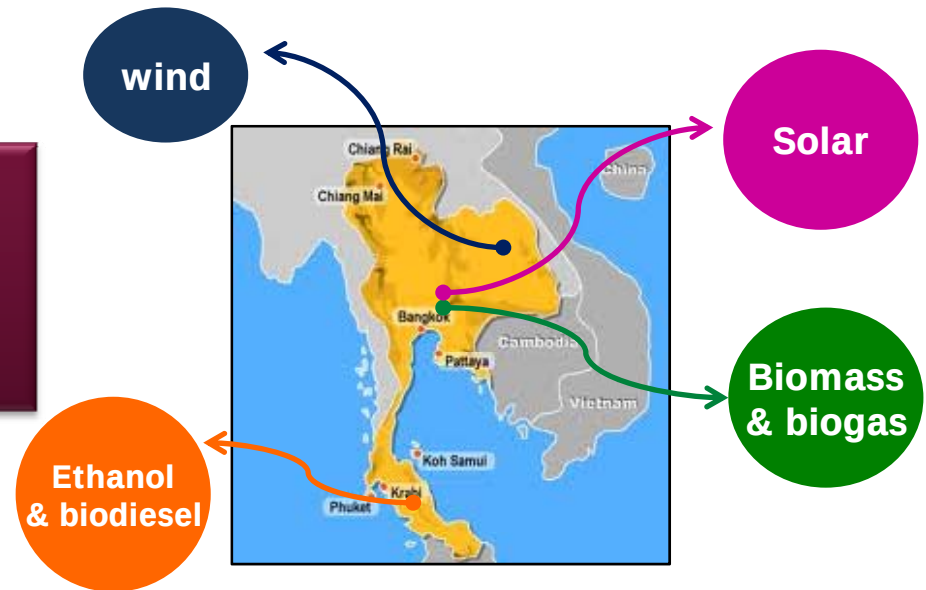
- Solar
- Hydro
- Wind

Crop

- Sugar cane (Molasses)
- Cassava
- Palm

Waste

- Agricultural
- Industrial
- Municipal solid waste (MSW)



Power
Generation

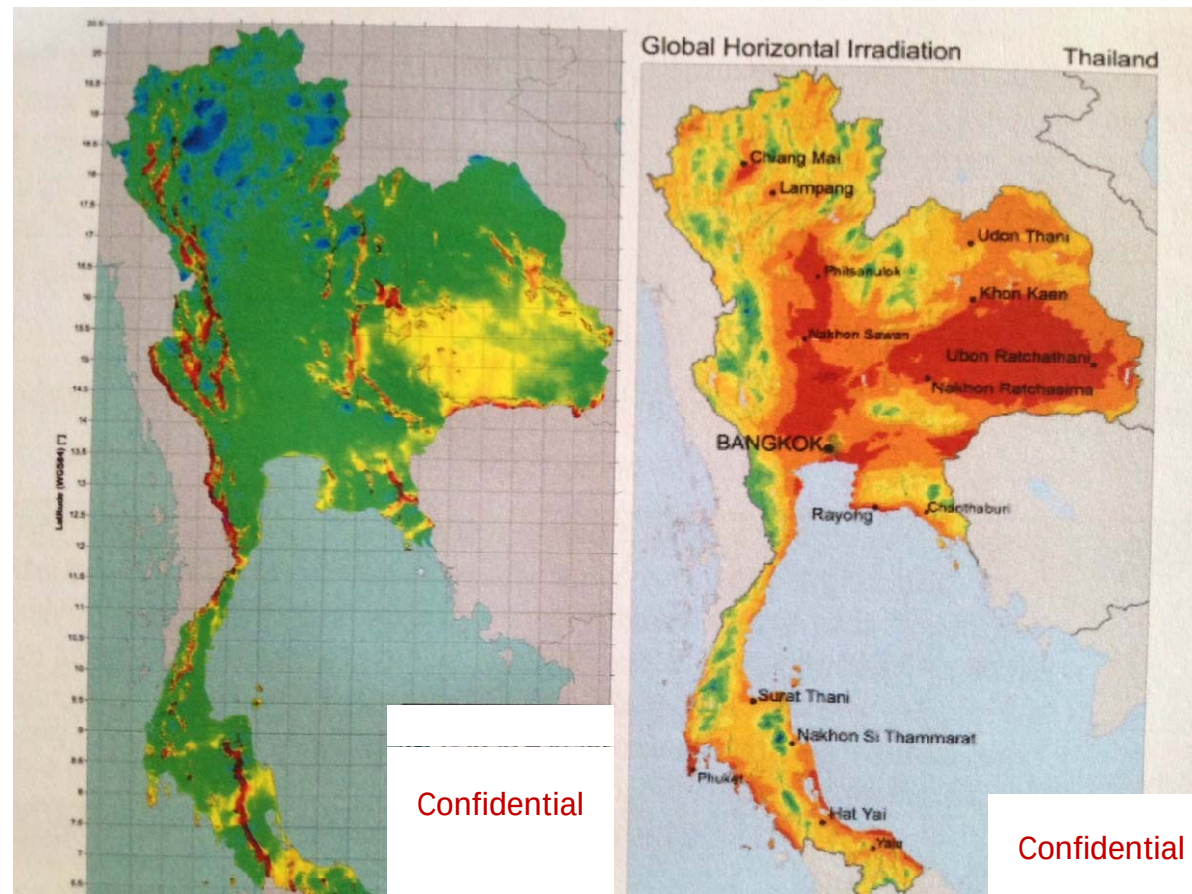
High potential of Solar radiation
 Average Solar Radiation Intensity
 $18 \text{ MJ/m}^2/\text{day}$
 $5 \text{ KWh/m}^2/\text{day}$

Heat





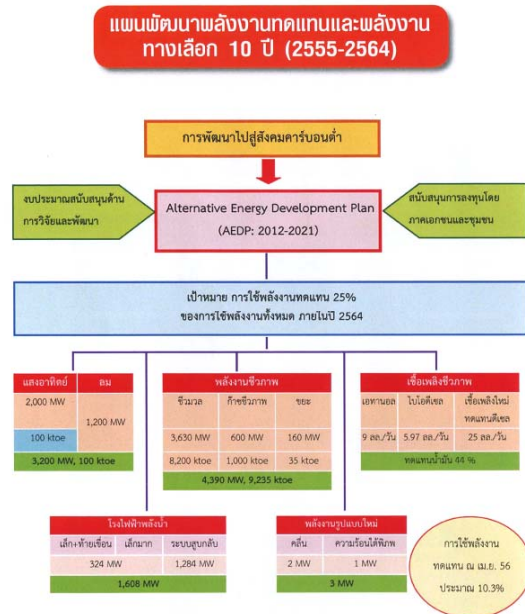
Solar Radiation map



- Max Solar Radiation in April – May , ave. **5.56 – 6.67** kWh/m² per day
- Ave annual radiation **5.00 – 5.28** kWh/m² per day
- Ave **1,400 – 1,500** kWh/m² per day
- **World Class Resources area**
Same as California , India, Spain, Southern France, Italy and Australia

Target of Solar

AEDP 10 year – plan 2012-2021 Rev 1



Target for Solar = 3,000 MW

Solar Farm
2,000 MW

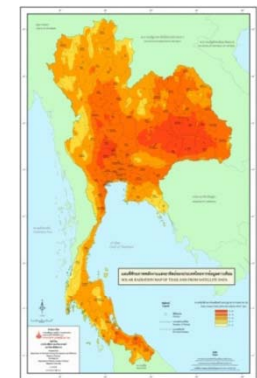
PV Rooftop
200 MW

Solar
Community
800 MW

Target for Solar Heat = 100 ktoe

Strategy Plan to promote Solar

1. Promote community produce & consume RE
2. Appropriate incentives => Adder = 6.50 baht / KWh (10 year guarantee) , Tax incentives, ESCO Fund, Investment Grant , Technical support
3. Research & Develop new laws & regulations => RE law
4. Improving Infrastructure => Transmission line, Distribution line
5. Promoting People Knowledge => Information , News , Solar map
6. Research & Development => Silicon wafer plants

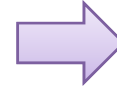


Current Situation

Solar

10 yrs AEDP Target

3,000 MW



Proposed Capacity

1,875.03 MW

**Approved and
Waiting for PPA**

1.25 MW

Signed PPA

**442.184
MW**

COD

**471.082
MW**



Current installed capacity (Dec.2012)

Solar Power = 376.72 MW

Solar Heat = 4.0 ktoe

**In the
Future**

supporting

- Promote Small system project at household level ex. solar PV rooftop ,
- Feed-in Tariff system (FIT)
- PV Recycle & Building code



Solar Power Plant & Rooftop Map



กรมพัฒนาพลังงานทดแทน
และอนุรักษ์พลังงาน
กระทรวงพลังงาน

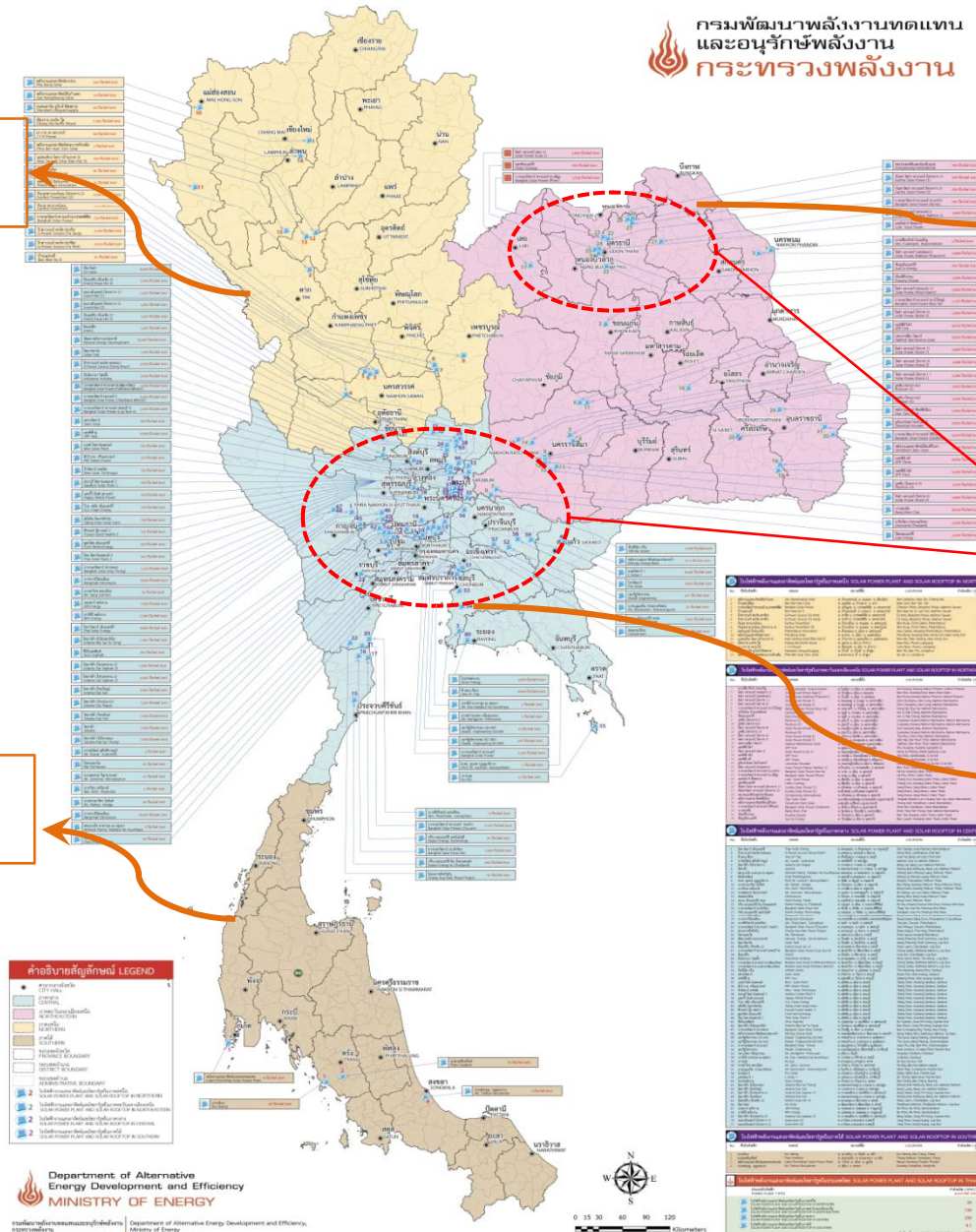
**North
24 MW**

**Northeast
120 MW**

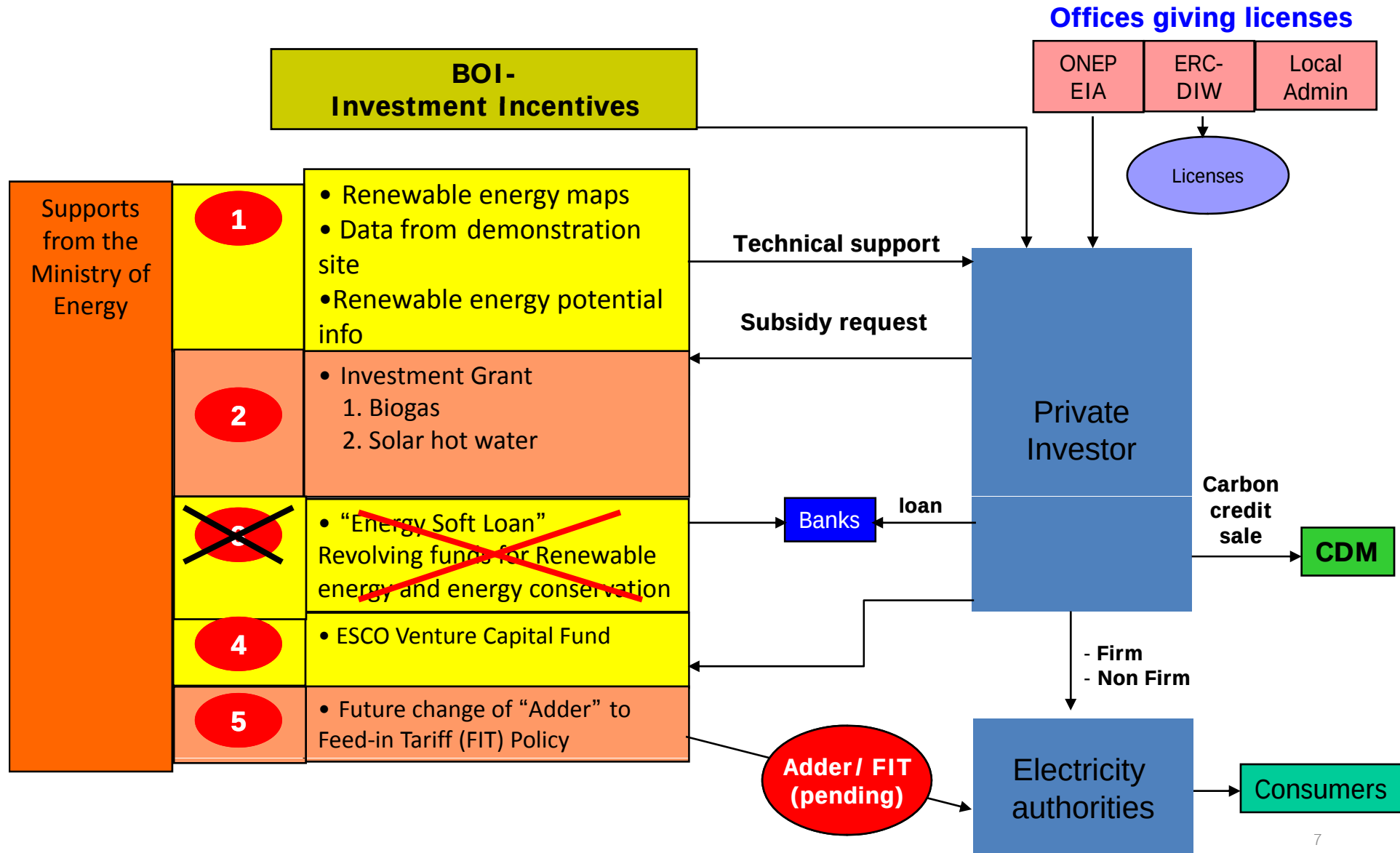
**Potential
Area**

**South
0.1 MW**

**Central
230 MW**

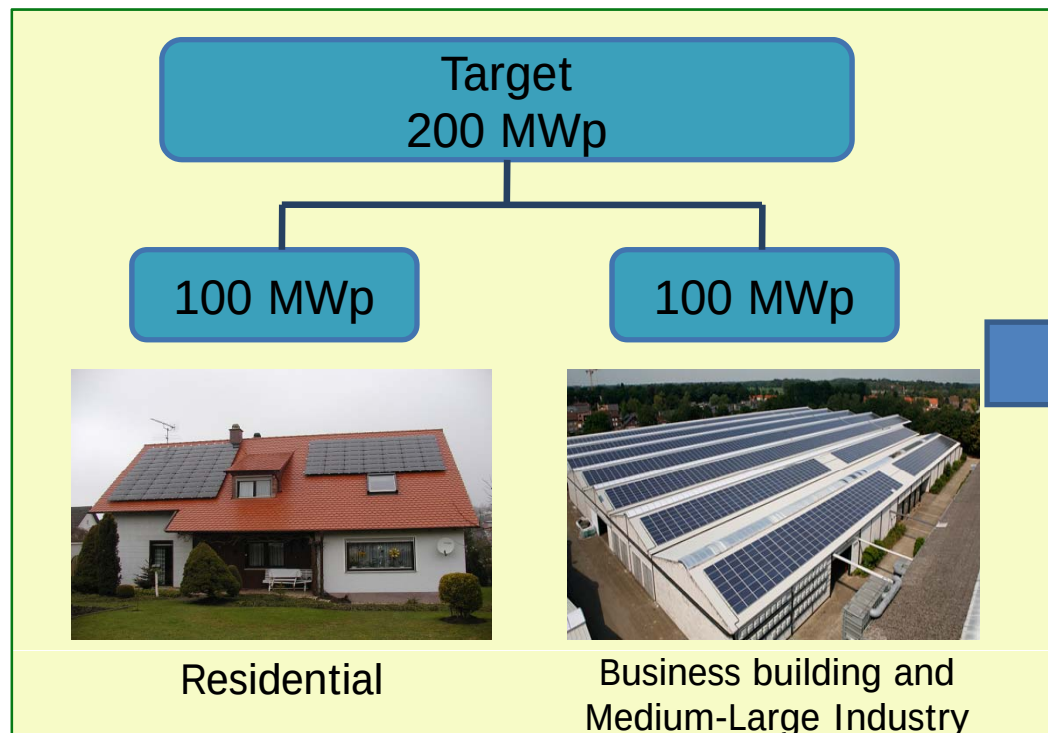


Measures for RE Promotion



Solar PV Rooftop

- => Cabinet approved
- => Feed-in Tariff (FIT) for Solar PV Rooftop
- => Benefit
 - Cut down government investment
 - Decrease Peak Load
 - Ensure Energy Security



FIT

1. Residential (0-10 kWp)
= **0.21 \$US/Unit**
2. Small business building
(10 - 250 kWp)
= **0.20 \$US/Unit**
3. Medium-Large Industry
(250 – 1,000 kWp)
= **0.19 \$US/Unit**

- 25 years guarantee
COD before December 2013

Solar Community

✓ Cabinet approved

=> Power purchase from solar community project 800 MWp

=> Benefit

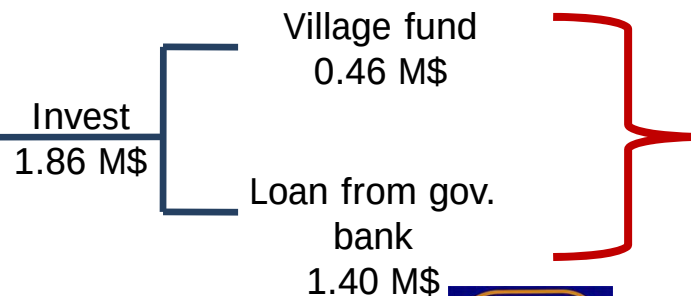
- people participation
- generate income
- supporting Distributed Generation RE



Target
800 MWp



Village / Community



ธนาคาร
ออมสิน
Government Savings Bank



1 MW project

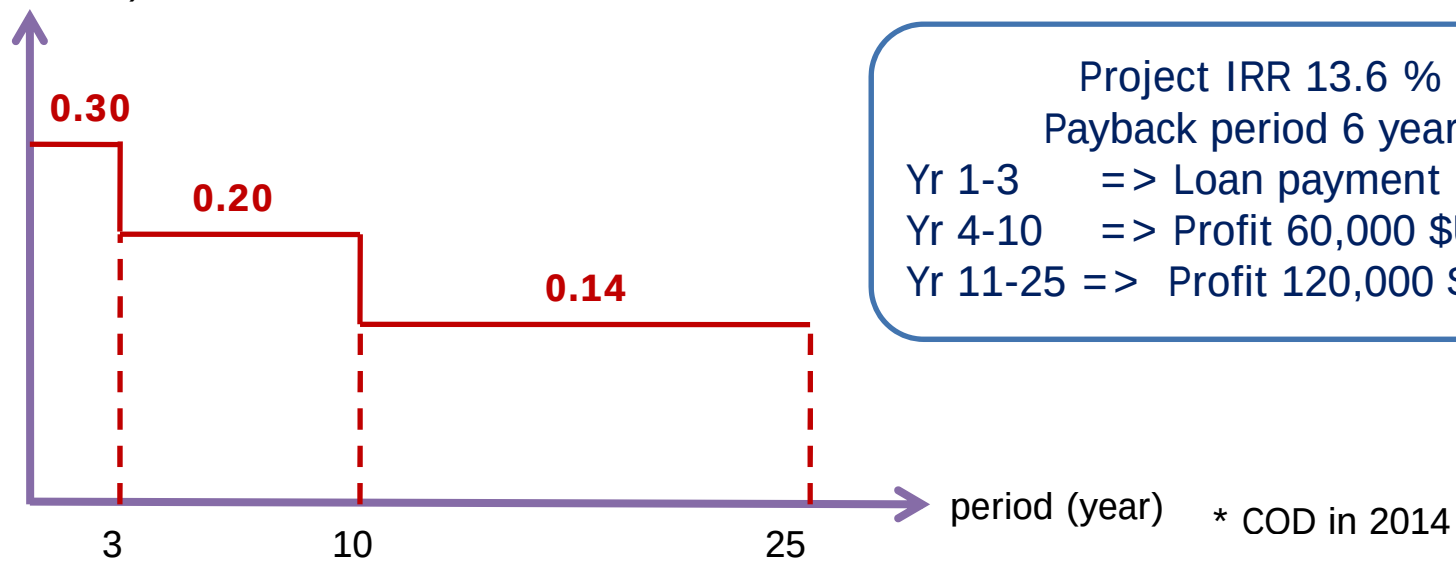
Total electricity generation 32.85 M.kWh
within 25 years

Solar Community

- => Feed-in Tariff (FIT)
- => Ministry of Energy coordinate with Thailand Village-fund Portal

FIT rate

FIT (\$US/Unit)



Project IRR 13.6 %
Payback period 6 years
Yr 1-3 => Loan payment
Yr 4-10 => Profit 60,000 \$US/Yr
Yr 11-25 => Profit 120,000 \$US/Yr