

“OVERVIEW”

**The Establishment of
The Center of Excellence on Clean Energy
(CENTRE)**

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Center of Excellence on Clean Energy (CENTRE)

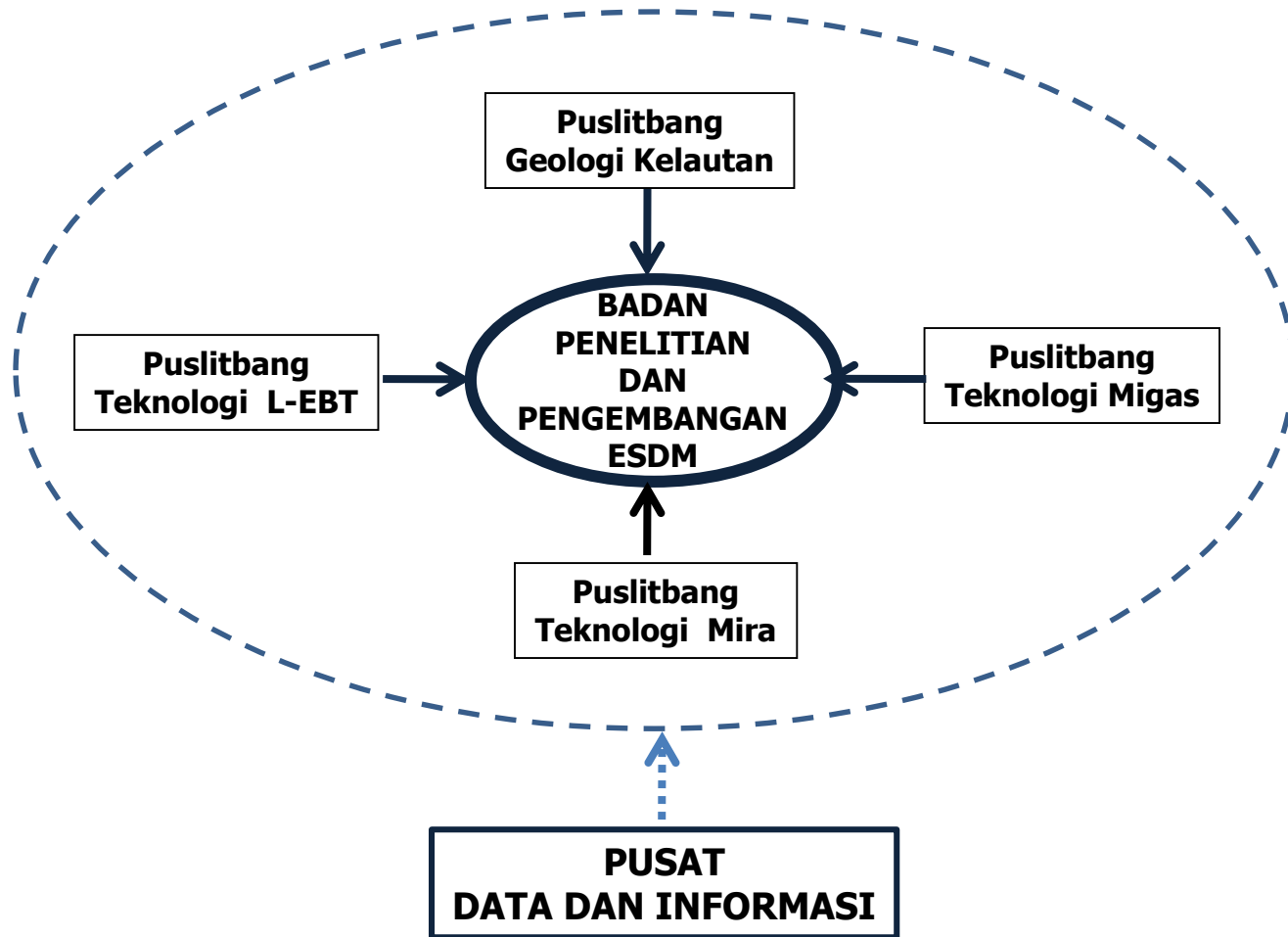
Facilitate Integration of **Clean Energy** Knowledge

Drawn From National and International expertise and assist in
the deployment of **clean energy technology** solutions
from public and private Sector entities

To support the **Sector Reform** such as :

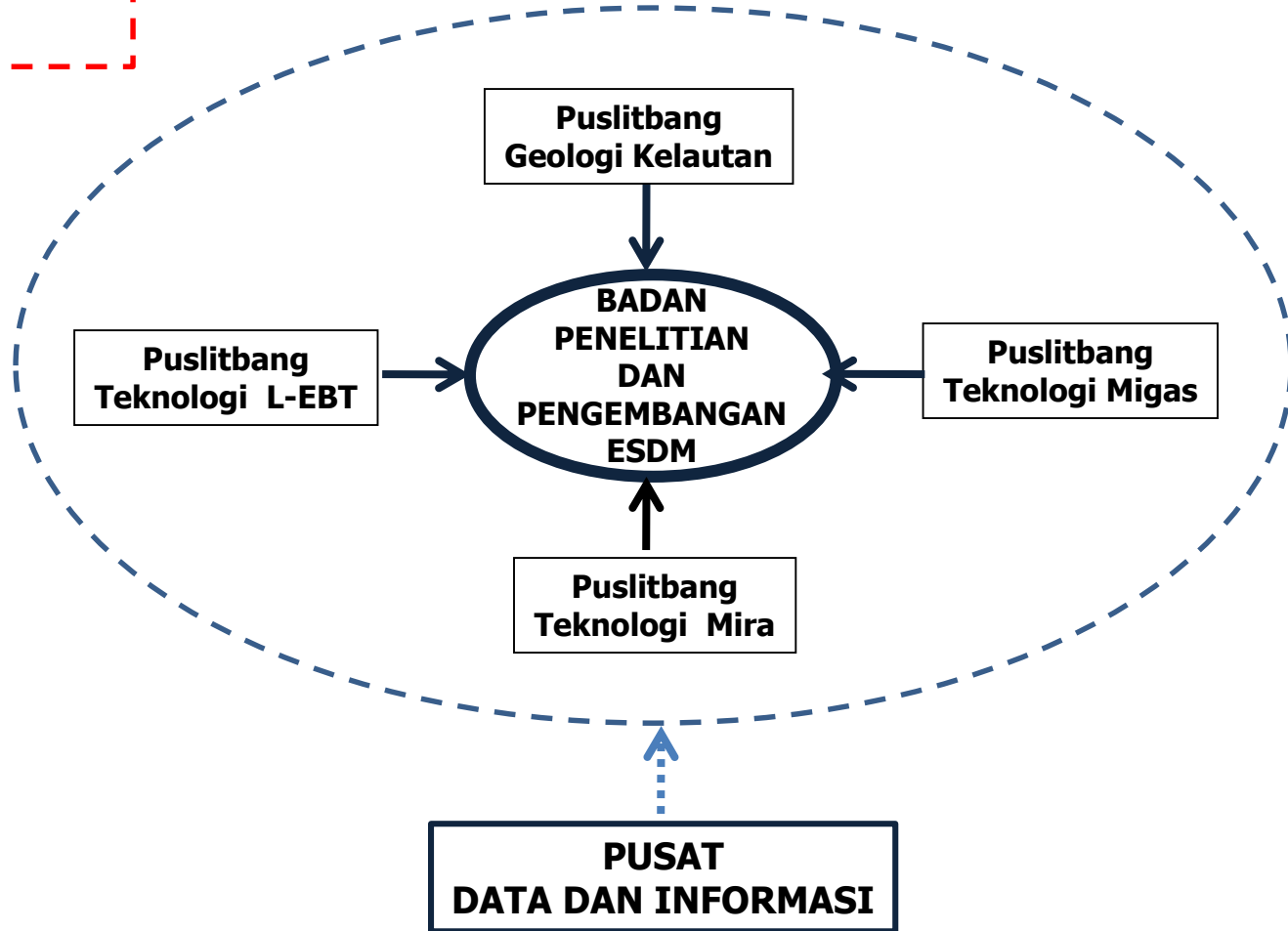
- **Expand Energy Production Through Greater Private Sector Investment and More Effective Public Sector Investment**
- **Bolster The Sustainability of The Energy Sector Through Increased Reliance on Domestic Gas, Renewable Energy, and Energy Efficiency Investments**
- **Provide Access to Modern Energy to All Indonesians**

THE EXISTING UNIT RELATED TO "CENTRE"



Where is the position of the CENTRE ?

CENTRE
?

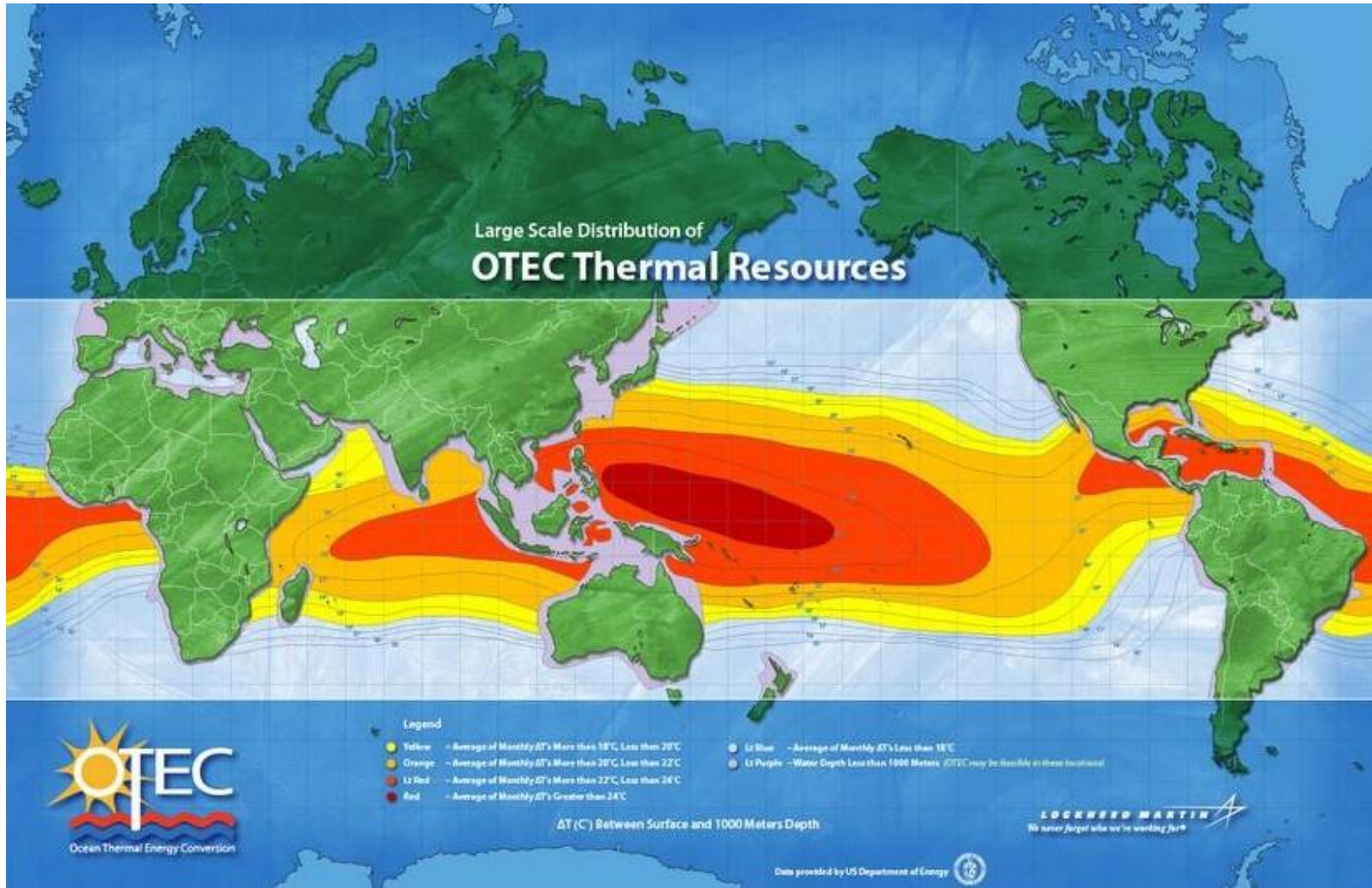


KEY WORDS

- **Clean Energy**
- **Clean Technology**
- **Sustainability of Energy**
- **Renewable Energy,**
- **Energy Efficiency**
- **Modern Energy**
- **Scientific Approach**
- **Independent and Objective**
- **Honest and Candid**

Clean and Renewable Energy Potential in Indonesia

(Ocean, Wind, Solar, Geothermal, Hydro and Bioenergy)



A CHALLENGE FOR “CENTRE”

- **The Development of Technology (Energy)**
- **The World Energy Prices**

DEMAND EFFICIENCY

Incandescent Light Bulbs



60 watts

1,200 hours

Compact Fluorescents (CFLs)



13-15 watts

8,000 hours

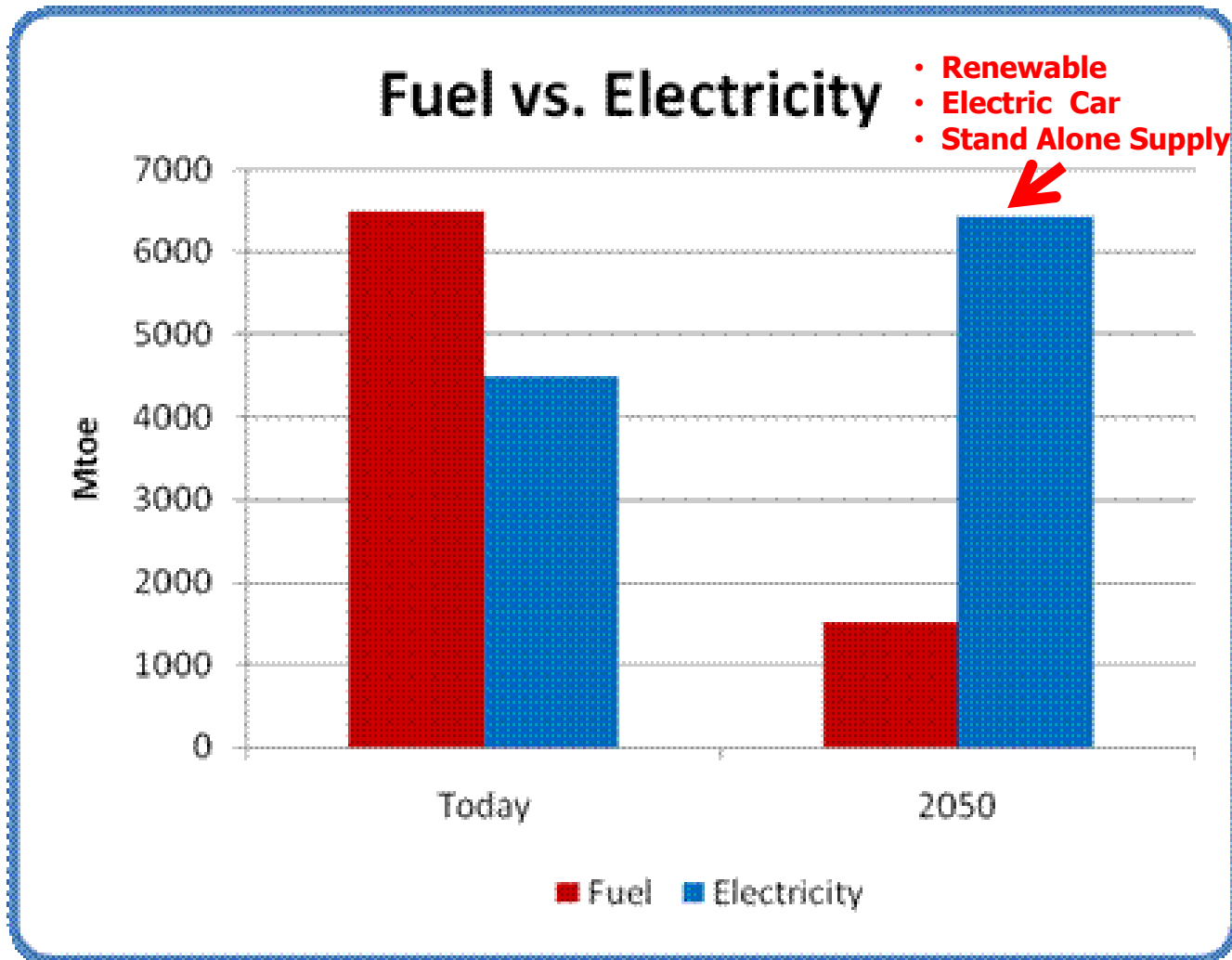
Light Emitting Diodes (LEDs)



6 - 8 watts

50,000 hours

Most of The Energy Source is Converted to Electricity



EXISTING WIND ENERGY



EXISTING OCEAN CURRENT ENERGY



EXISTING OCEAN WAVE ENERGY



EXISTING OTEC



Japan : 50 kilowatts of electricity



Mini OTEC was deployment in July, 1979 and became the first successful at-sea OTEC plant in India.



The OTEC plant in Hawaii USA

EXISTING FUEL CELL



WORLD ETHANOL



Brazil - Gasoline on the left, Ethanol on the right



WORLD ALGAE



It could potentially become important oil exporter like the Middle East by devoting just one percent of land to **algae** farms.

EXISTING PHOTOVOLTAIC



EXISTING SOLAR THERMAL ENERGY



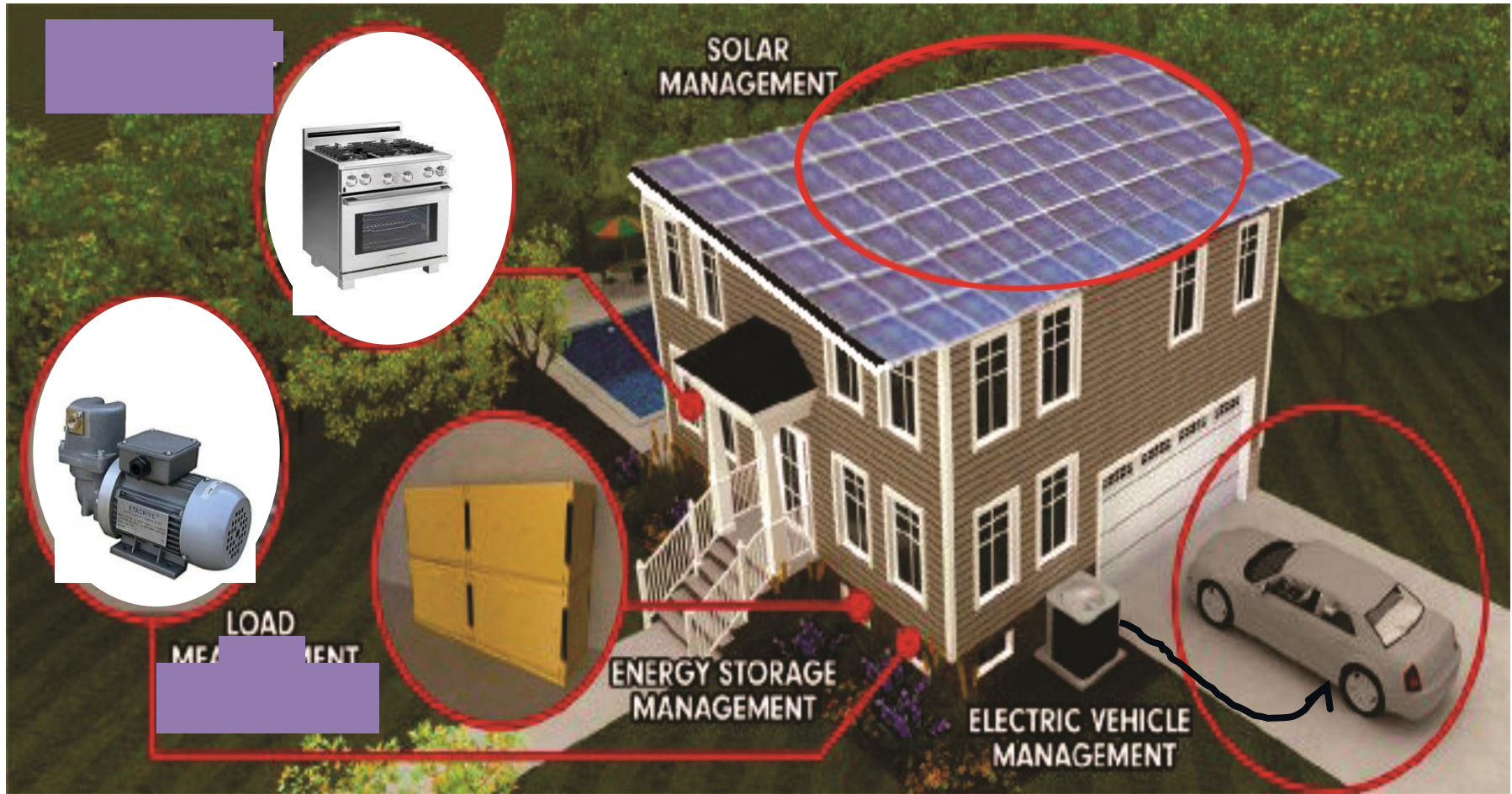
EXISTING ROOFTOP



ELECTRIC CAR WITH SOLAR ENERGY



The Future Solar House



25 square meters solar cell with 40% efficiency will Produce Electric Power = **10 000 Wp**

If solar radiation is **6 hours per day**, the Available Electric Power = **2 500 W for 24 hours**

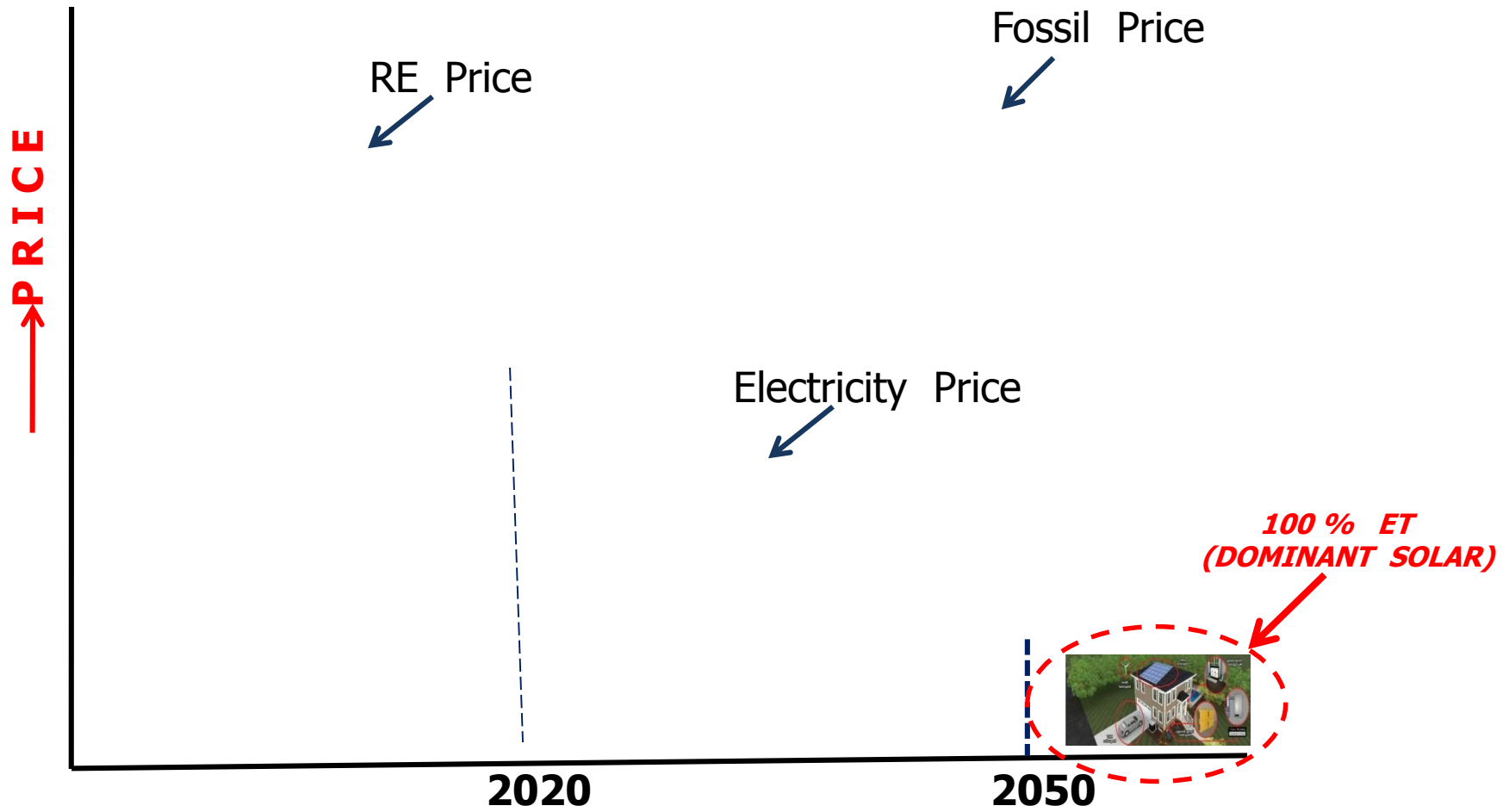
**ISSUE RENEWABLE ENERGY PRICE
IS
STILL MORE EXPENSIVE THAN FOSSIL**

HOWEVER !!!

World Prediction

***By 2020 The Price of Renewable Energy
Will be Cheaper Than Fossil Fuels***

Prediction of World Energy Prices



- Dififcult Time
- Nedd a Specific policy
- Influenced Fossil Energy

- Cheap Energy Prices
- Individual Supply
- Import Solar Cell = Import Energy

THANK YOU