



# GreenPowerMonitor

a DNV GL company



## YOUR TEAM TODAY

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# **SUPPORTING O&M MOVING FORWARD WITH UNSUBSIDIZED SOLAR**

London, January 30<sup>th</sup> 2019



# LEADING RENEWABLE MONITORING AND DATA MANAGEMENT SOLUTIONS

# **INTRODUCTION**

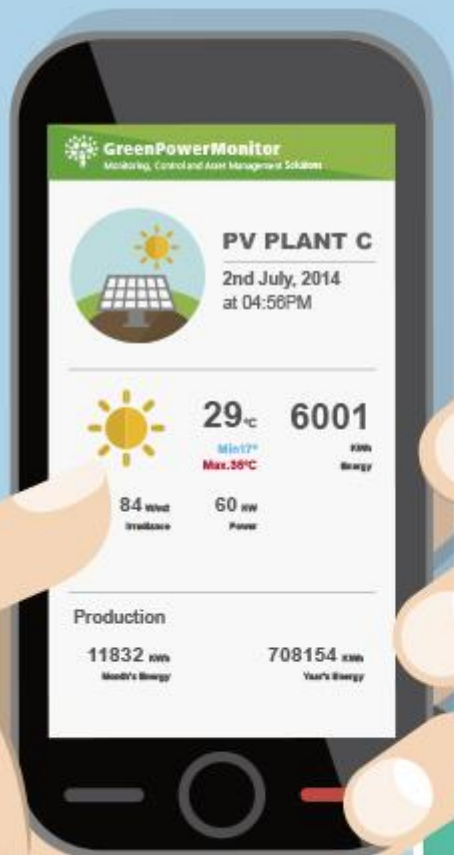


## WHY DO WE EXIST?

### We love renewable energy

GreenPowerMonitor, part of the DNV GL, is an international company that offers products and services in the renewable energy sector.

Our purpose is to provide tools to maximize performance of renewable energy assets, maximize efficiency in the management of renewable energy portfolios and contribute to have the **greenest** energy mix in the grid.





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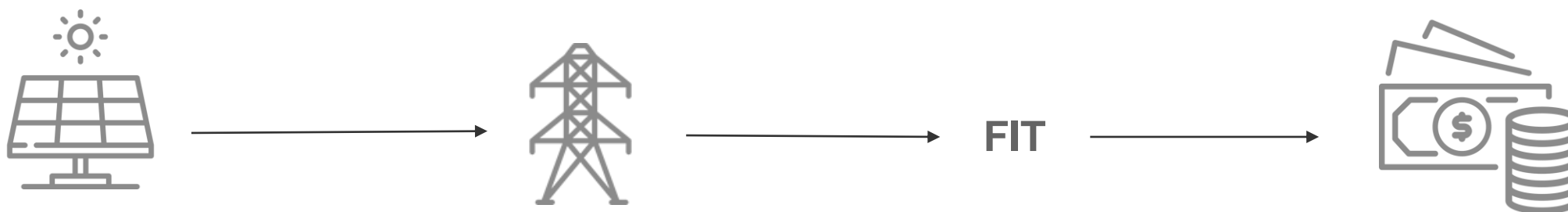
# WE DID IT THANKS TO OUR TEAM

# **THE PRESENT: UNSUBSIDIZED ASSETS**

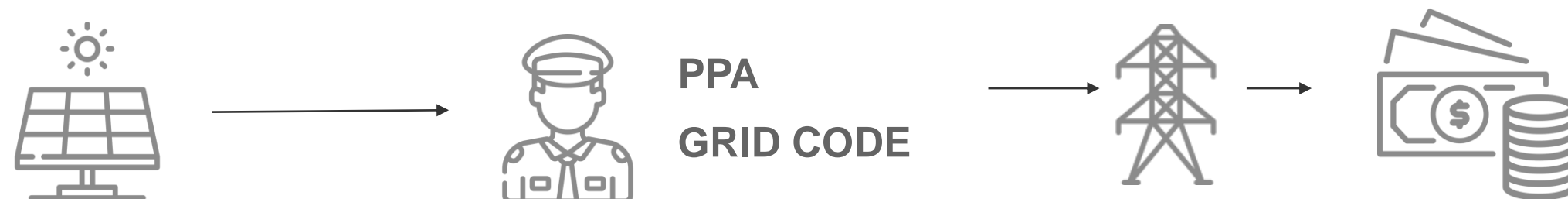


## MODEL CHANGE

### SUBSIDIZED SOLAR



### UNSUBSIDIZED SOLAR



# WHAT DO WE INVESTORS EXPECT MOVING FORWARD?

Have prices moving **DOWN**

**BELOW**

**FURTHER BELOW**

**I SAID DOWN!**





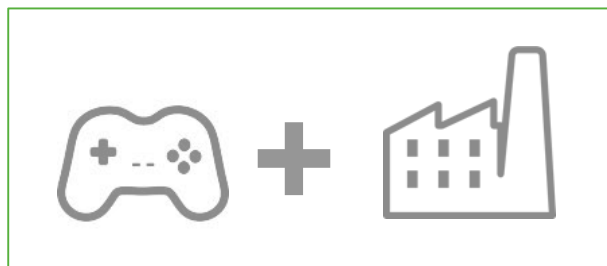
# OPERATING UNSUBSIDIZED ASSETS:

- Do our assets need less O&M activities?
- Will O&M be easier on new assets?
- Will the O&M actions cost less?

JUST BECAUSE OUR ASSET IS UNSUBSIDIZED,  
THEY DO NOT NEED DIFFERENT CARE... TODAY.



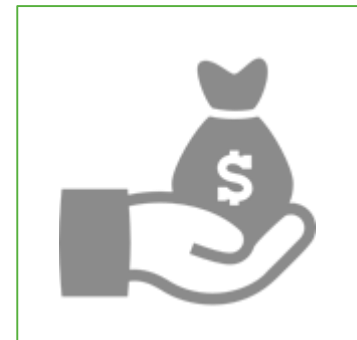
# WHAT DIFFERENCES WILL WE HAVE OPERATING UNSUBSIDIZED ASSETS TODAY?



**CONTROLS  
PPA**



**CONTROLS  
POOL**



**COST  
REDUCTION**



# AND THE FUTURE?

# ENERGY

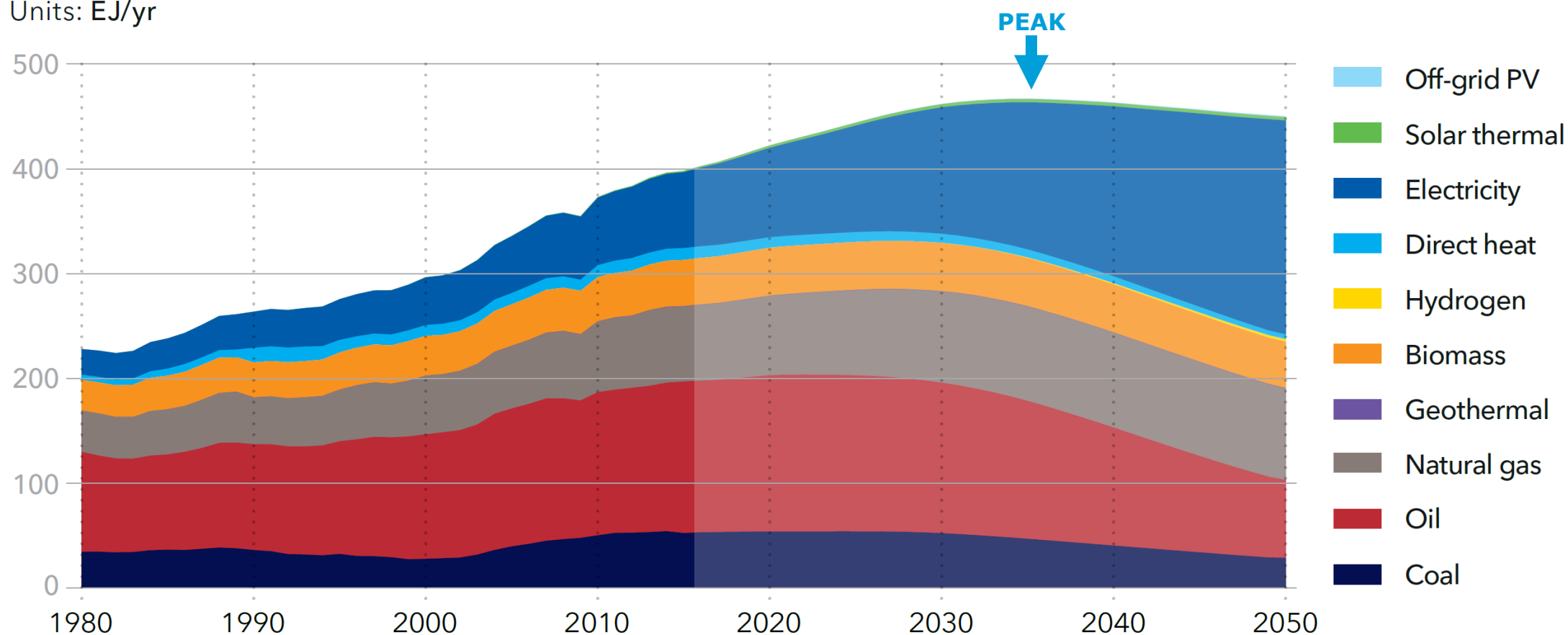
# TRANSITION

# OUTLOOK

# OUR ETO

## World final energy demand by carrier

Units: EJ/yr

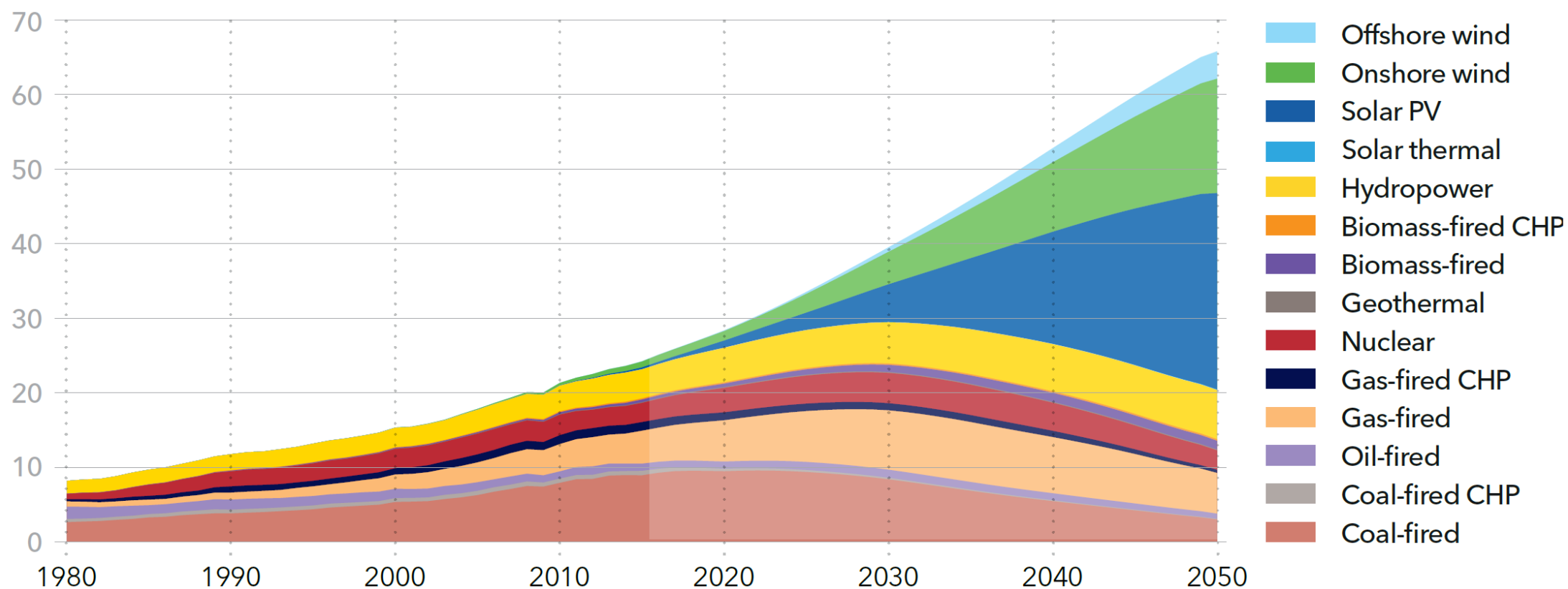




# OUR ETO

## World electricity generation by power station type

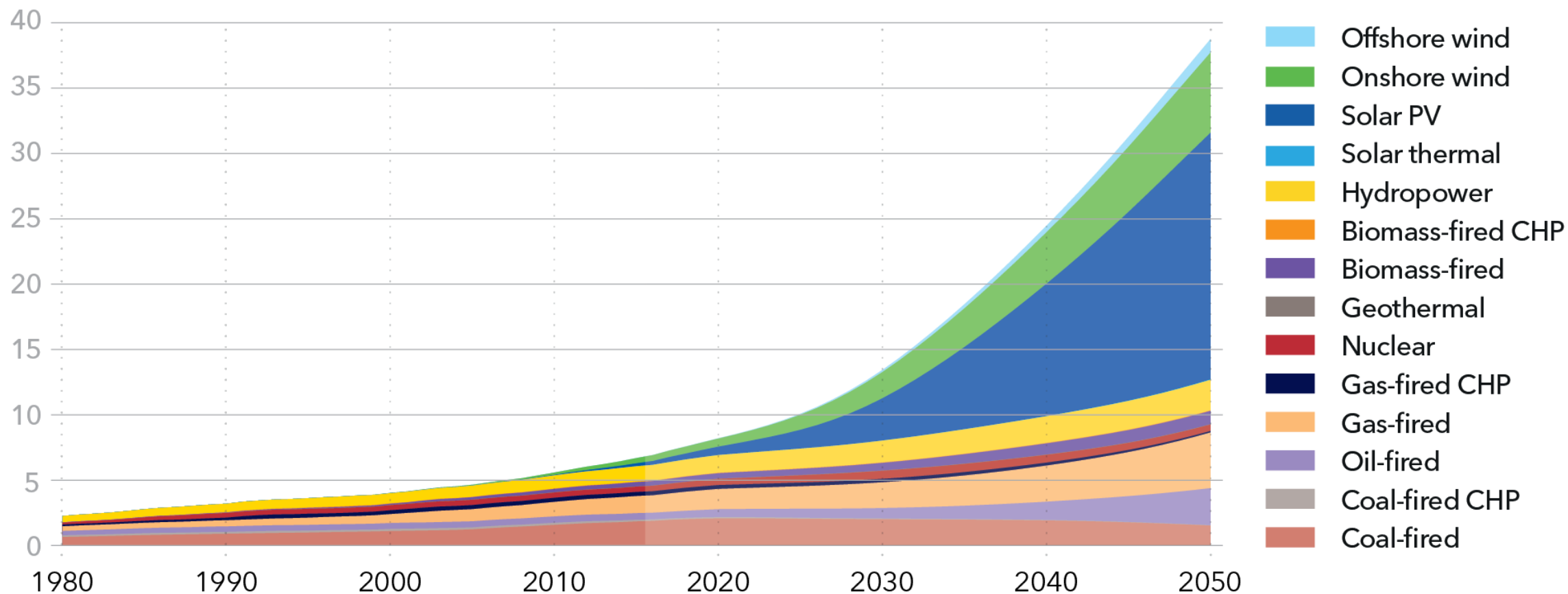
Units: PWh/yr



# OUR ETO

## Electrical Generation: INSTALLED CAPACITY

Units: TW



## CONCLUSIONS

The world will become **electric!**

Renewables to satisfy **80%** of the electrical demand

**Solar** will be the technology with the **biggest** growth

**MARKET BOOM IS STILL TO COME!**





# CONCLUSIONS

- Business model will be challenged
- Storage to play a key role
- Renewables to compete with traditional generators
- Portfolios to consolidate into bigger portfolios
- To succeed we need to be more efficient



# **SUPPORTING ENERGY TRANSITION**

## HOW WILL THIS IMPACT UNSUBSIDIZED SOLAR SCHEMES?



**OPERATIONAL  
COST REDUCTION**



- Digitalization
- Adding value from experience
- Algorithms that support efficiency
- Management of consolidated portfolios

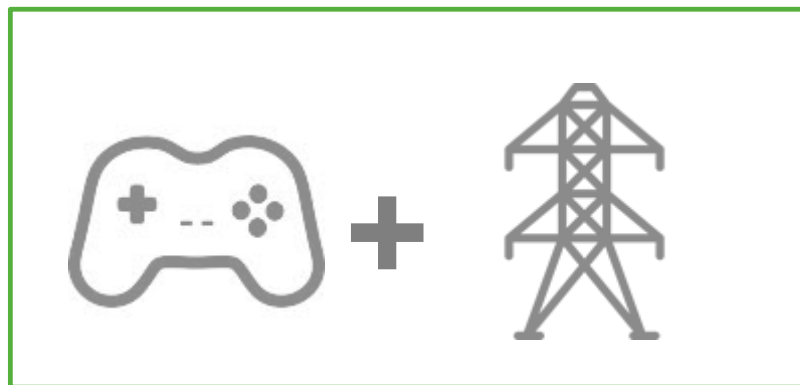


**ARTIFICIAL INTELLIGENCE**



**ASSET MANAGEMENT**

## HOW WILL THIS IMPACT UNSUBSIDIZED SOLAR SCHEMES?



**CONTROLS**



- Supporting the grid
- Trading energy efficiently
- Combining technologies to support demand



**GRID INTEGRATION**



**MULTI-TECHNOLOGY**



## CONCLUSION: TRENDS TO SUCCEED IN THE FUTURE



**ARTIFICIAL  
INTELLIGENCE**



**MULTITECHNOLOGY**



**ASSET  
MANAGEMENT**



**GRID  
INTEGRATION**

# HOW IS ENERGY TRANSITION GOING TO BE?



# CHALLENGING

# HARD



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# FUN!



# THANKS