



Deutsch-Französische Plattform énergétique  
Energieplattform franco-allemande



# FRANCO-GERMAN ENERGY PLATFORM @ OFATE / DFBEW :

## AI SERVING AN INTEGRATED EUROPEAN ENERGY TRANSITION

FRANCA DIECHTL, TEAM LEADER INTERNATIONAL COOPERATION



Who are we?

# DENA – PROMOTING THE ENERGY TRANSITION

- **CENTRE OF EXPERTISE**  
for energy efficiency, renewable energy sources and system integration
- **INTERMEDIARY**  
between politics, industry, science and society
- **PLATFORM**  
for dialogue with stakeholders from various industries and fields
- **PARTNER AND INITIATOR**  
of federal government for its energy and climate policy strategy
- **ENABLER**  
of the energy transition in concrete projects in Germany and abroad

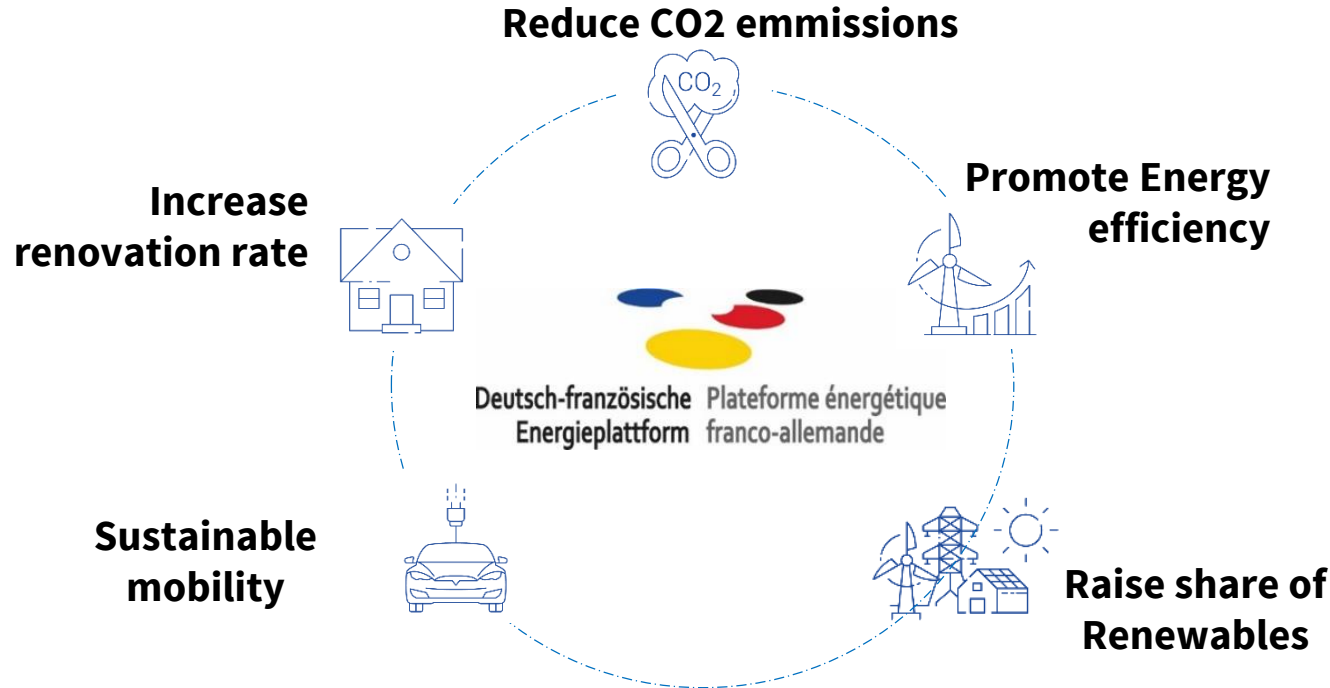






# The Franco-German Energy Platform

# BUILDING ON JOINT ENERGY POLICY TARGETS



# GOALS OF THE PLATFORM

- Establishing a **LONG-TERM COOPERATION** between Germany and France in the energy domain
- Transferring joint political goals into **COOPERATION PROJECTS**
  - ✓ Pooling **expertise** and **networks** of the energy agencies
  - ✓ **Project initiation and -conception** with actors from both countries
  - ✓ Support during project **implementation** (preparation of financing concepts, project communication, etc.)
- Demonstrate the added value of a Franco-German approach in practice by **INCREASING THE VISIBILITY** of project results

LA TRANSITION ÉNERGÉTIQUE pour la  
CROISSANCE VERTE



Energie  wende  
Umschalten auf Zukunft

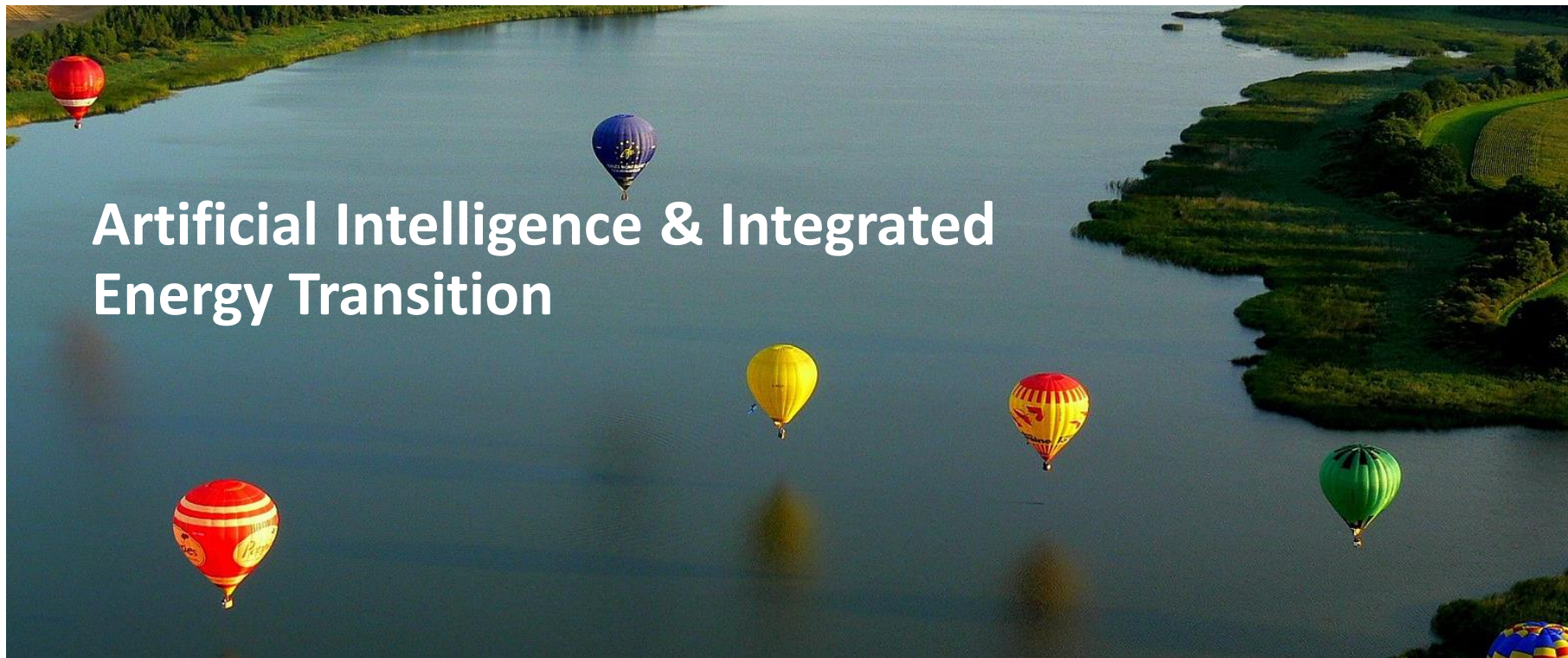
  
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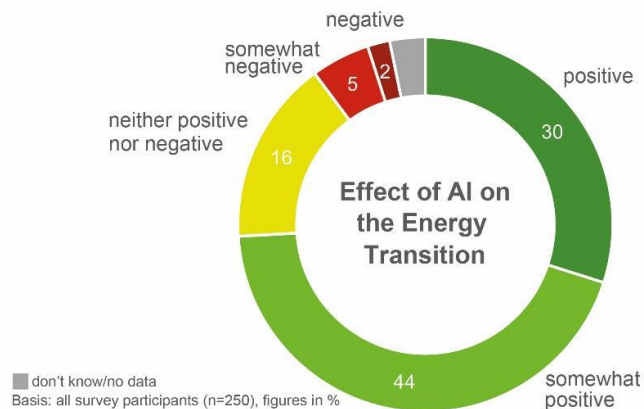
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# Artificial Intelligence & Integrated Energy Transition

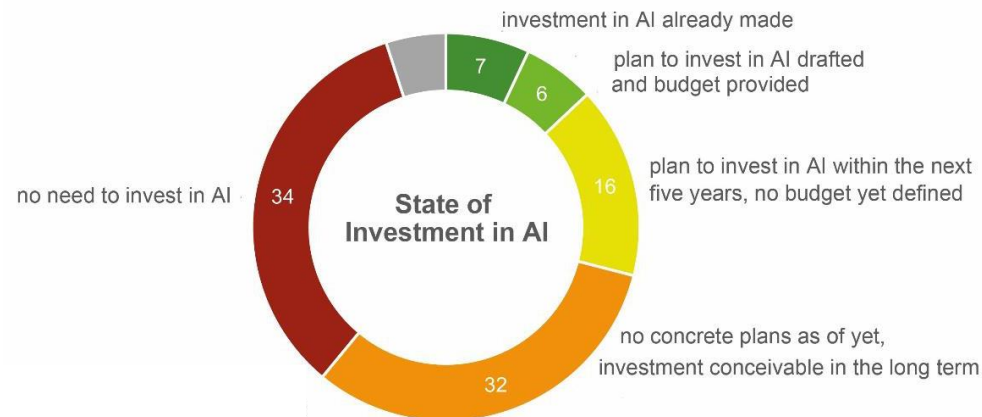


# ARTIFICIAL INTELLIGENCE (AI): INDUSTRY STILL CAUTIOUS

**Majority of German companies believe that AI  
will have a positive impact on the energy  
transition**



**Cautious reserve among decision-  
makers in the energy industry**





# ENERKI-PROCESS 2019-2020



**DENA  
ANALYSIS #1**  
**Artificial  
Intelligence for  
an Integrated  
Energy  
Transition**



**DENA  
ANALYSIS #2**  
**Global trends of  
Artificial  
Intelligence and  
their Implications  
for the Energy  
Sector**

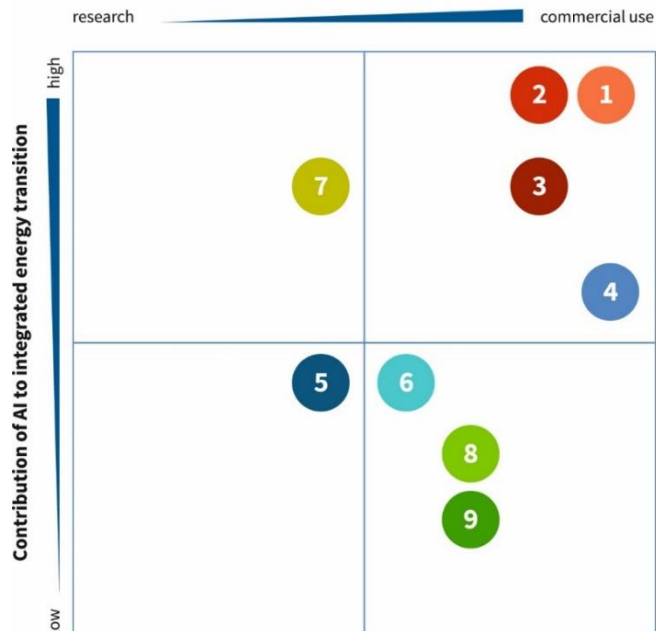


**DENA  
ANALYSIS #3**  
**Artificial  
Intelligence –  
from Hype to  
Reality for the  
Energy Sector**

**Deepened analysis of  
potentials and challenges of  
AI in the energy sector**  
➤ **Knowledge built-up**

# POTENTIAL OF AI

## State of development of AI in energy industry



### General Foundations for Decision-Making

- 1 Predictions
- 2 Operation optimisation
- 3 Inventory optimisation and other strategic business decisions

### Maintenance & Security

- 4 Predictive maintenance
- 5 Maintenance, repair and dismantling
- 6 Security measures

### Distribution & Consumer Services

- 7 Making it easier for active consumers to participate
- 8 Customisation of products and marketing measures
- 9 Process automation for measurements, bills and general distribution

**Potential for AI in the Energy industry is tremendous**  
 ➤ **3 use cases**

# AI HELPS TO MAKE BETTER DECISIONS



## Use-Case: Prediction



**Basic requirement** for other Use-Cases



**Commercial usage** vs. **lack of data**



Compensatory measures in the event of **imbalances between supply and demand** & **Improved grid operation**

# AI SUPPORTS IN MAINTENANCE & SECURITY



## Use-Case: Predictive Maintenance



Already in **commercial use**



**High initial investment** vs. **future cost savings**



**Smooth operation** of power plants and energy infrastructures &  
**Reduction of costs**



# AI EASES PARTICIPATION OF ACTIVE CONSUMERS



**Use-Case: Making it easier for active consumers to participate**



Requirement for a **future decentralised energy system**



Delay due to **missing measurement instruments**



Applications from Cluster **General Foundation for Decision making** also **available** for “small” participants & Integration of **decentralised units**

# ARTIFICIAL INTELLIGENCE (AI) READY FOR IMPLEMENTATION



- Europe is lagging behind in the AI sector
  - Outlook for energy industry, however, is promising
- ➔ **Franco- German cooperation essential in driving implementation of AI in the energy sector**



**Dena AI analysis I, II & III available in French (I & III), German and English**

<https://www.d-f-plattform.de/unsere-themen/kuenstliche-intelligenz/>

# FRANCO-GERMAN COOPERATION ON AI

- 2018: both countries adopt National Strategies on AI
- 2020: Joint declaration of intent about the creation of an „AI Research and Innovation Ecosystem“
- ✓ More cooperation between central actors (e.g. INRIA and DFKI) through workshops, studies etc.
- ✓ Joint call for innovation projects in the field of AI launched including challenges in the energy sector such as:
  - ✓ How can AI solutions facilitate the development of renewable energy through a better integration in the grid?
  - ✓ How can AI and DLT be useful for integrating decentralized systems into the grid?
  - ✓ What AI solutions can be used to make buildings more energy efficient? What is the impact of CO2 reduction potential in residential buildings?



# THANK YOU!

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dena AI activities