



A novel smart grid architecture that facilitates high-RES penetration through innovative markets towards efficient interaction between advanced electricity grid management and intelligent stakeholders

## Final e-Demo Day Event

**Welcome to the FLEXGRID DEMO Day**

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# FLEXGRID in brief

- H2020 Research and Innovation Action
- October 2019 - September 2022
- Budget: 3.9 M€ EC funding
- 11 partners, Coordinator: NTUA/ICCS
- High quality low-TRL research to address future realities in the European electricity sectors that has real impact potential for industry stakeholders



A novel smart grid architecture that facilitates high-RES penetration through innovative markets towards efficient interaction between advanced electricity grid management and intelligent stakeholders

## Objectives

• Facilitate energy sector stakeholders' energy service trading, dynamic interaction and operation

• Improve interaction between energy markets and grid operation

• Improve the mechanisms for DSOs and TSOs to utilise flexibility to reduce capital investment

• Investigate sustainable business models for stakeholders in the smart grid ecosystem

## ▶ **Need for high and distributed RES penetration**

- ▶ How to deal with RES intermittency, non-dispatchability, stochasticity, etc?
- ▶ How to deal with new challenges in the distribution network management (i.e. local congestion, voltage control)?

## ▶ **Need for energy markets' liberalization**

- ▶ How to deal with the various roles and conflicting interests of many energy market stakeholders (RES producers, flexibility service providers/aggregators, flexibility market operators, system operators)?
- ▶ How to develop economically sustainable business models for the new emerging energy ecosystem (i.e. B2B) and individual market stakeholders?

## ▶ **Need for sustainable DER investments and optimal exploitation of flexibility**

- ▶ How can system operators (TSO/DSO) utilize efficiently flexibility provided by distributed FlexAssets to guarantee network's stability/robustness/cost efficient operation (avoid expensive grid reinforcements)?
- ▶ How can FlexSuppliers optimally invest on/operate their FlexAssets to maximize their profits?



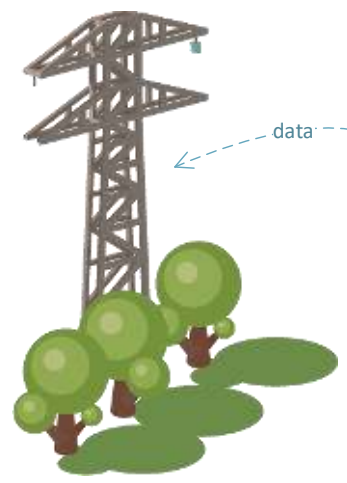
Electricity markets  
(energy, capacity,  
balancing, reserves...)

Access to  
Different markets

**FlexRequests**

**FlexOffers**

Asset operators



Grid operators



Local Flexibility  
markeplace



Energy service  
providers

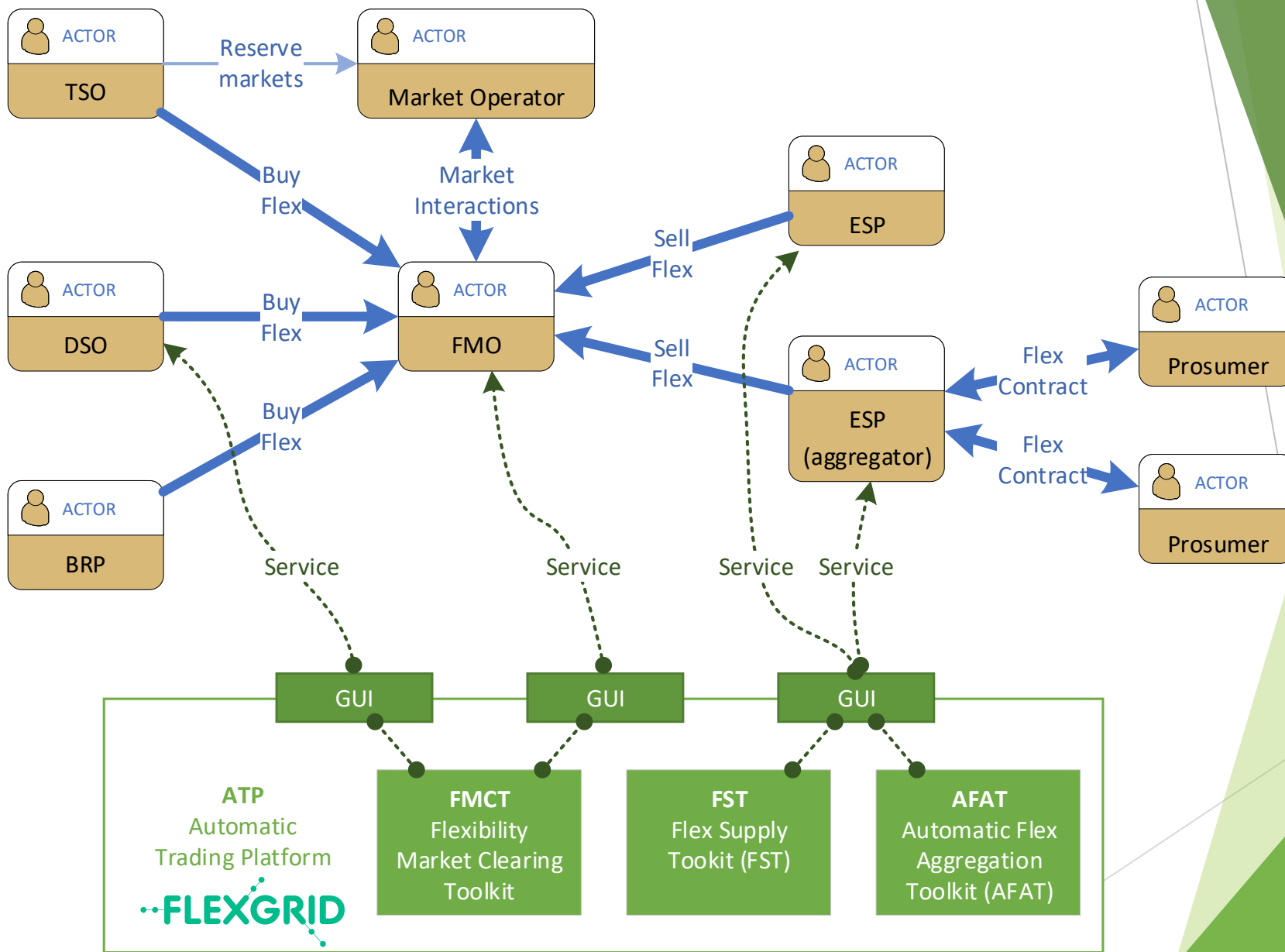


End-users



Distributed  
Generation

**Network - Aware  
Flexibility Market  
Clearing**





# Enjoy the DEMO DAY!

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Visit our website!

<https://flexgrid-project.eu/>

YouTube channel:

[https://www.youtube.com/channel/UCEpd\\_rFhiltkGTi7dmNL--yg](https://www.youtube.com/channel/UCEpd_rFhiltkGTi7dmNL--yg)

GitHub area:

<https://github.com/FlexGrid>



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