

# ESA Space Solution Space for Energy

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ESA Business Applications*



# PURPOSE OF THE EUROPEAN SPACE AGENCY



“To provide and promote, for exclusively peaceful purposes, cooperation among European states in **space research and technology** and their **space applications**.”



Article 2 of  
ESA Convention





## The largest space innovation network in the world

The go-to place for great business involving space to improve everyday life.

Supporting European companies including start-ups and SMEs to develop businesses using space technology and data.

Offering funding, business and technical support to help to generate successful business and create jobs.





# BUSINESS APPLICATIONS

Using **any space asset(s)** and integrating them with terrestrial assets for the **benefit of life on Earth**





# THEMATIC VARIETY



**Safety & Security**



**Environment & Wildlife**



**Energy & Utilities**



**Health & Social Care**

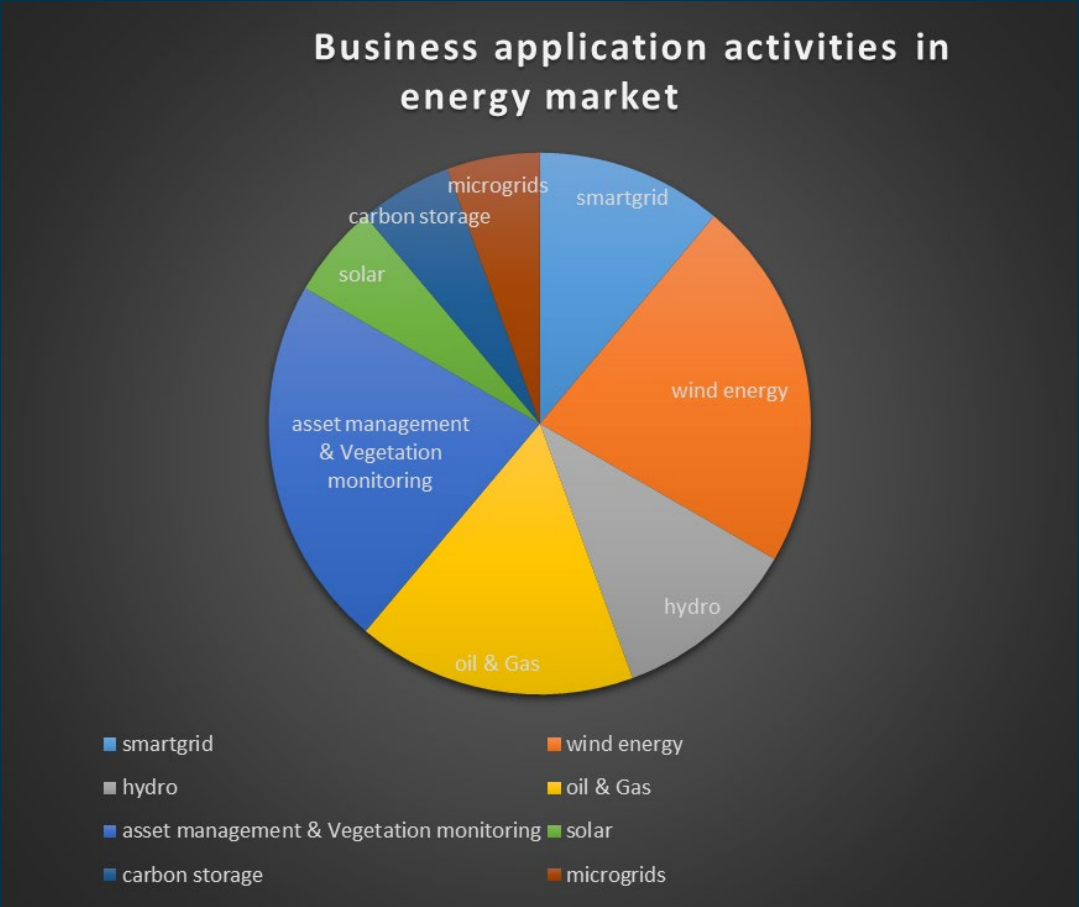
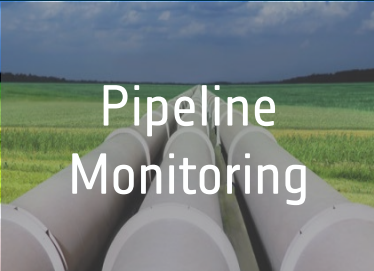
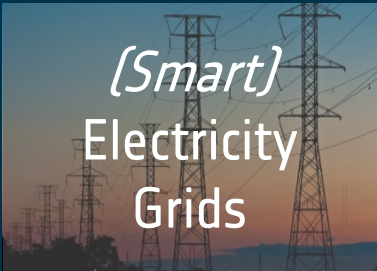
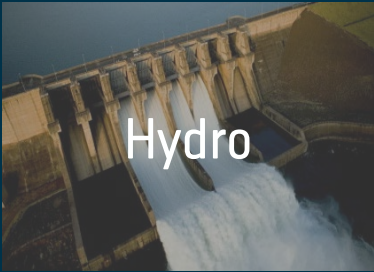


**Transport & Logistics**



**Agriculture, Forestry & Fishing**

**>75% SMEs  
>33% Newcomers**





# ESA, EDSO and ENTSO-E announce cooperation agreement

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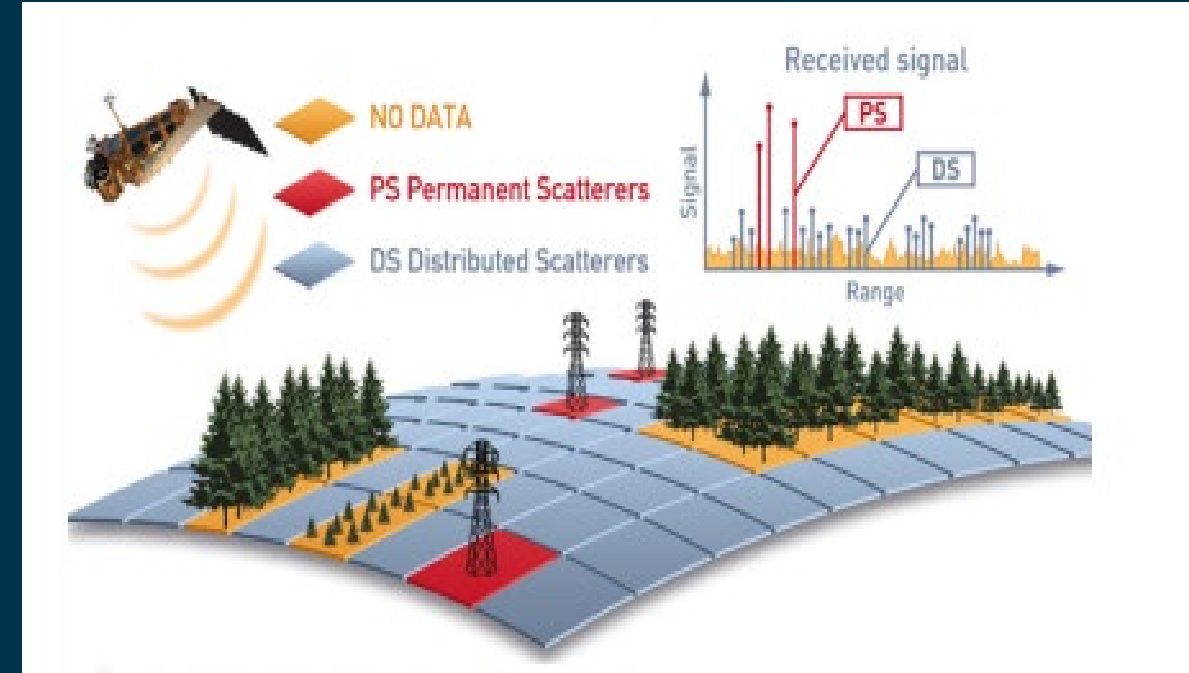
How can satellite applications support the European power grid and its evolution?

ESA/ENTSO/ EDSO initiative:

- prediction of consumption or generation peaks;
- developing Internet of Things services for smart homes and electric vehicles;
- Assets management;
- Etc.

<https://business.esa.int/news/esa-edso-and-entso-e-announce-cooperation-agreement>

# Pylon movements and ground displacement



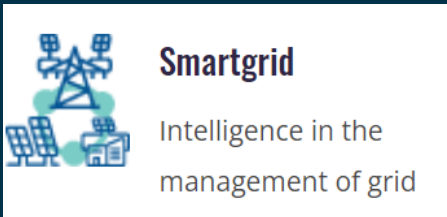
SAR images are used for the detection of small and slow movements of pylons and ground

Credit: GridWatch project  
<https://business.esa.int/projects/gridwatch>



# SPace-based services for smart-Grid and electricity Grid maintenance and Operations (SP4GO)

Smart management of the grid  
Change Detection  
Disaster Management Service

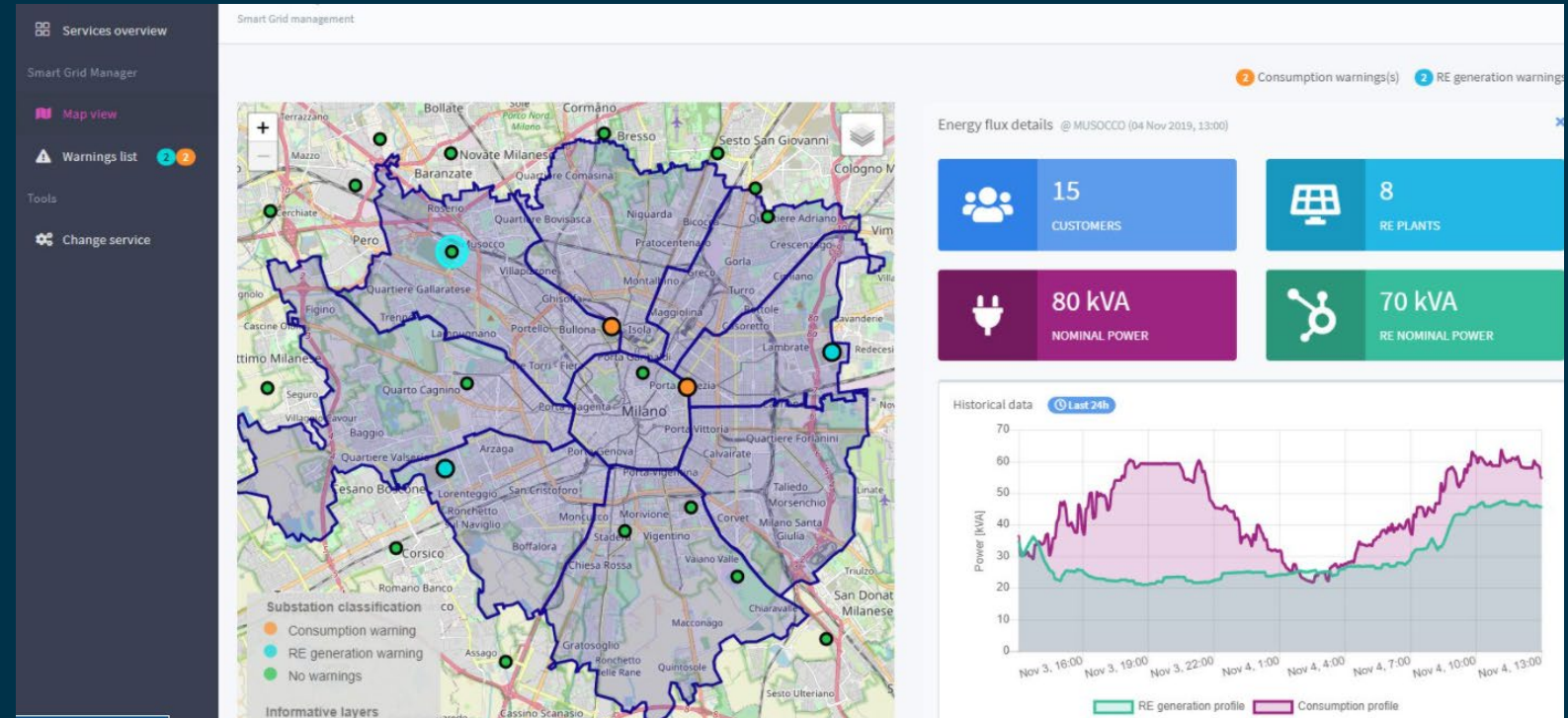


Identify the optimal location for new charging stations

Optimize revenues from Charging Infrastructure

Optimal Charging Point (CP)

Optimize the impact of CP on distribution grid

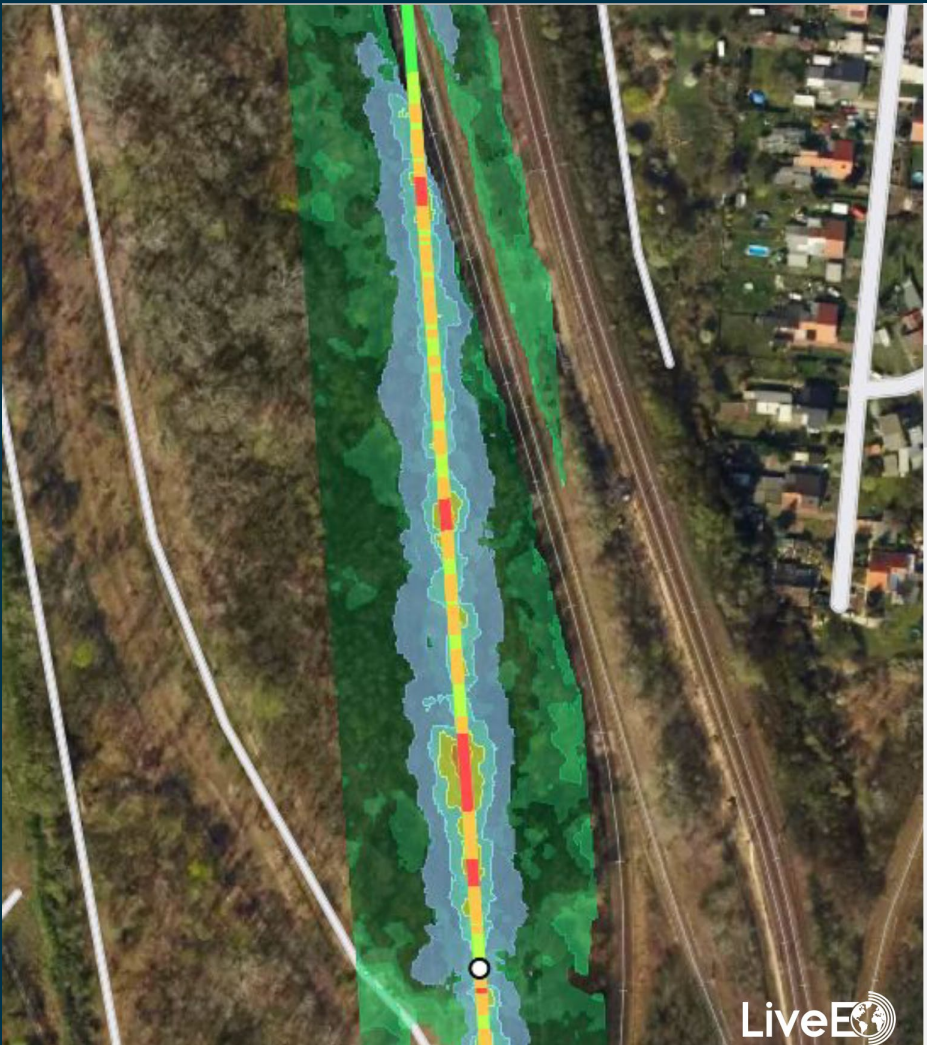
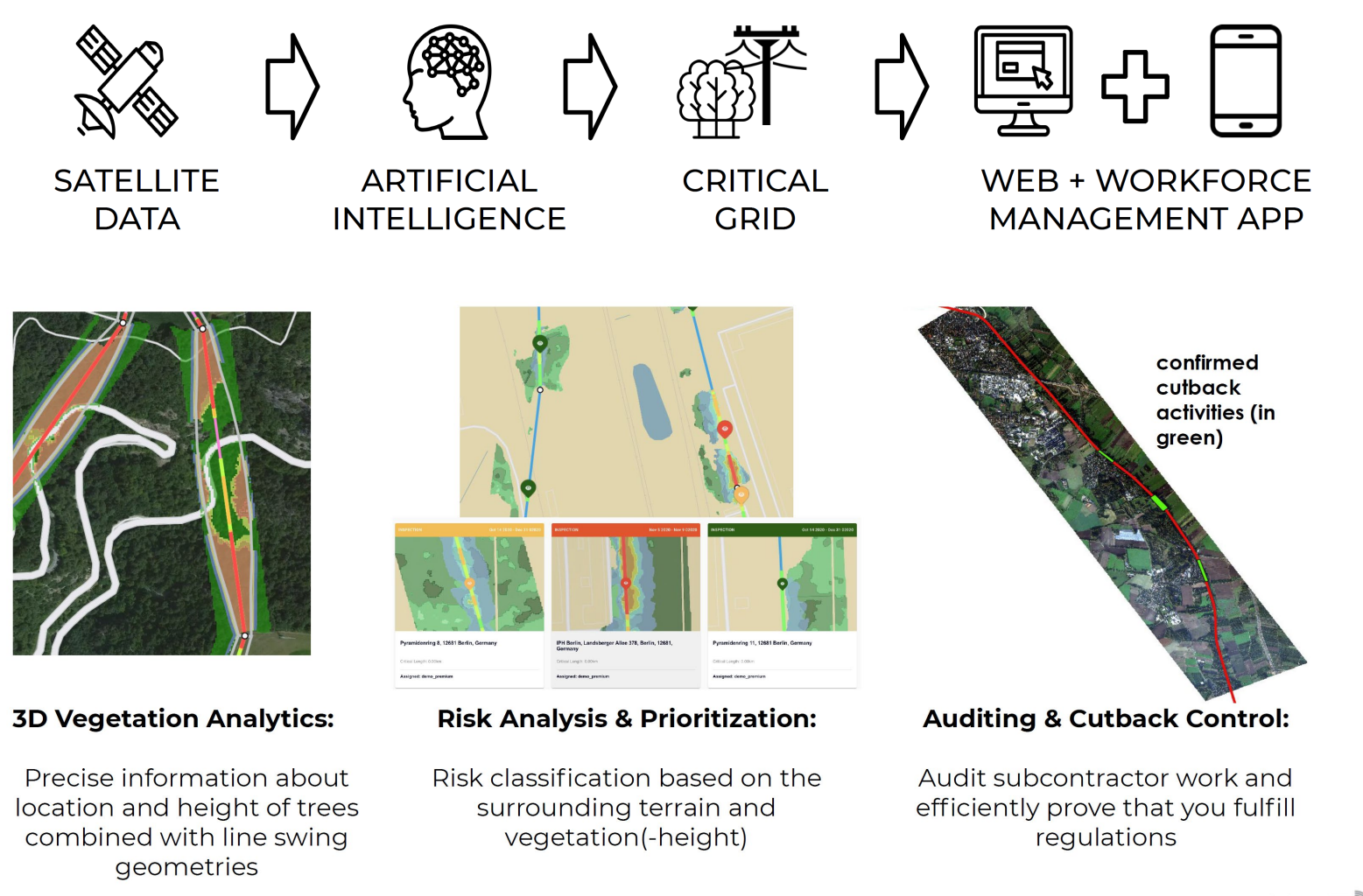


- **Earth Observation satellites** data for monitoring and for forecasting
- **Telecommunications satellites** for satellite backup platform for communication and data exchange of O&M operators
- **Satellite navigation data** for pinpointing the geolocation of O&M crew operators mobile-phone users and for geo-positioning of the lightnings



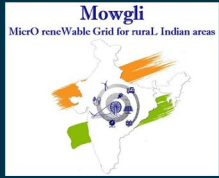
<https://business.esa.int/projects/sp4go>







# MicrO reneWable Grid for rural Indian areas

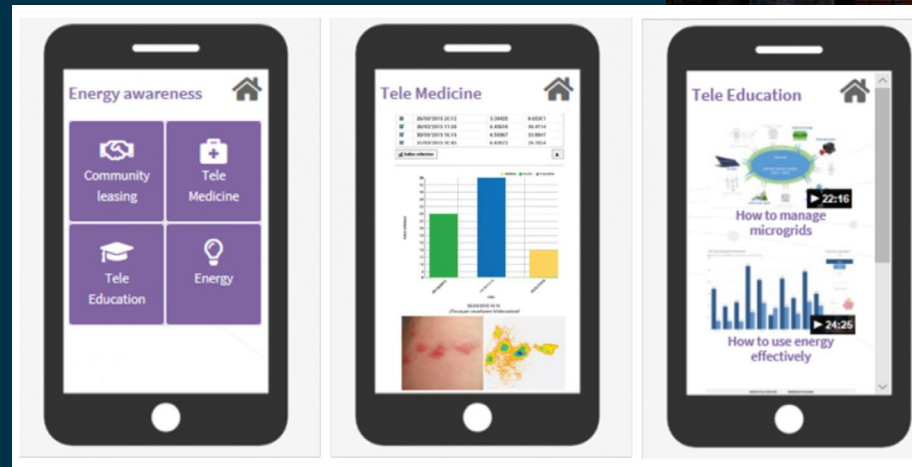


Support microgrid planning and operations for developing economies:

- Strategic planning
- Microgrid optimal design
- O&M: load balancing, remote control, anomaly detection, predictive maintenance

Pilot in India on-going

<https://business.esa.int/projects/mowgli>





# Space and Digital Transformation for Green Energy Utilities



ESA UNCLASSIFIED





- Resulting from the cooperation between ESA and the UK Department for Digital, Culture, Media and Sport (DCMS) in coordination with the UK Department for Business, Energy & Industrial Strategy (BEIS)
- the call aims at developing cutting-edge solutions leveraging 5G terrestrial and satellite communication networks, and potentially other space assets, to address the UK Government's priorities in the energy sector
- Scope: Feasibility Study, Demonstration Project



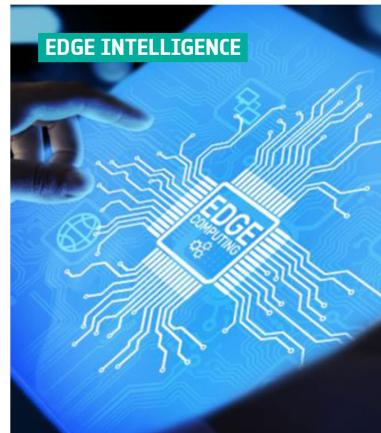
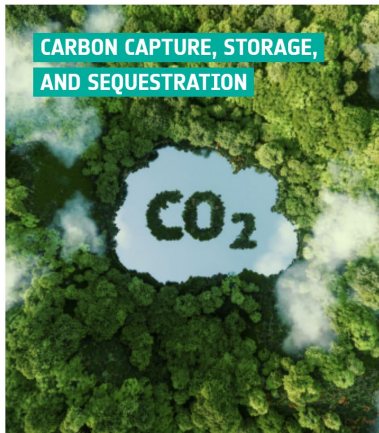
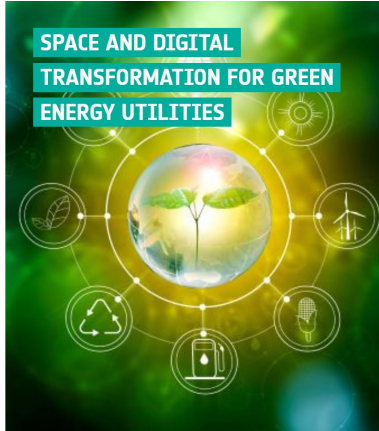
Call to be issued in March  
2022

<https://business.esa.int/funding/space-and-digital-transformation-for-green-energy-utilities>

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# Current opportunities



More at: <https://business.esa.int/>



# Thank you!

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