EO services contributing to SDGs

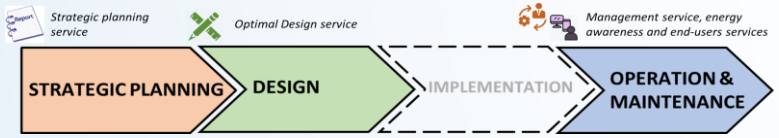
MOWGLI: MicrO reneWable Grid for ruraL Indian areas

Intelligence in Energy Management
A Flyby Group Company

7 AFFORDABLE AND CLEAN ENERGY

Target 7.1. By 2030, ensure universal access to affordable, reliable and modern energy services. Indicator 7.1.1: Access to electricity

- User: Electrification (Microgrid Owner, Designer, Operator)
- Challenge/Needs: Electrification is a combination of different steps: setting up of electricity infrastructure, providing connectivity to households, give adequate access to quality power at affordable rates. To ensure energy access in rural area it is needed to improve the energy availability, reliability, quality.
- Initiative: Through the ARTES 4.0 Downstream Applications by ESA (European Space Agency) the MicrO reneWable Grid for ruraL Indian areas was launched. Microgrids are distributed systems of localised renewable generation, distribution network and load - are being increasingly deployed particularly in rural areas to achieve energy access.
- Results: Satellite-based services to support and improve the different phases of the microgrid projects. Software for Microgrid optimal design and Operation & Maintenance (O&M) services. Usage Awareness for Indian Rural Area
- Service Provider: ESA and i-EM



From planning to monitoring: the exploitation of satellite technologies in urban and rural microgrid life cycle

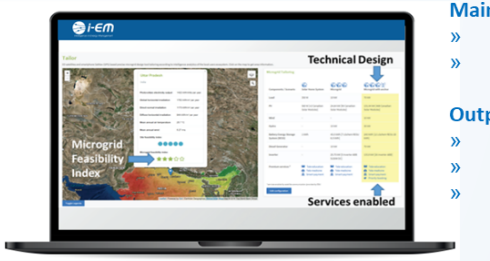
https://sdg.esa.int/activity/mowgli-4458
https://business.esa.int/projects/mowgli

PLANNER: *Urban area identification and classification by satellite imagery*

Main features
- Satellite imagery (EO) **classification**
- **Load assessment**

Output
- Strategic planning with the **site identification**
- **Site Feasibility Index**

TAILOR: *Microgrid optimal sizing & design*



Main features
- Renewable **energy assessment**
- Microgrid **sizing** and **design** with best components choice

Output
- Microgrid tailored-**design report**
- **Microgrid Feasibility Index**
- **Technical design** and **services enabled**: Tele-education, Tele-medicine, Smart payment, Priority booking

MANAGER: *Microgrid Operation & Maintenance (O&M) services*

Main features
- **Real-time monitoring**
- **Predictive maintenance**
- Energy Management real-time System (**EMS**)
- **Load, generation and extreme weather** forecasting
- Energy **thief detection**

Output
- Information for **O&M activities**

SMART: *Energy services and awareness for end-users*

Main features
- Payment services: Pay-as-you-go, Smart-booking, Priority-booking
- Energy awareness services: Community leasing, Tele-Medicine, Tele-Education, O&M training

Output
- Mobile and Smartphone **application**

EARSC
European Association of Remote Sensing Companies