



SMO ... for smart substation monitoring

All-in-one retrofit solution for remote monitoring of local, non-digital substations

Oliver OBITAYO, Chief Commercial Officer, *lemonbeat GmbH*

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SMO by lemonbeat ... *easy, cost-efficient, compliant*

New regulatory requirements implemented as part of the Federal Energy transition program

- Updated Energy Industry Act EnWG §14a comes into effect by January 2024.
- At least 20% of substations in the power grid have to be remote digitally observable
- ... digital remote monitoring and transparency down to feeder line level required



SMO by lemonbeat ... *easy, cost-efficient, compliant*



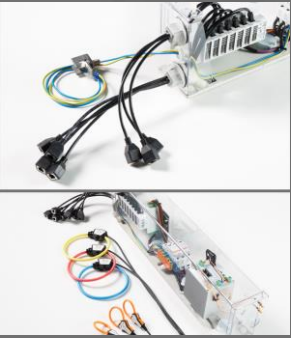
Technological barrier:
98% of transformer stations non digital/connected

- Approx. 600,000 transformer stations in Germany
- New legislations mandates to basically to digitalize 120,000 transformer stations
- Replacement of old transformer stations would cost on average €100,000 and is time/resources consuming
- Retrofit solutions are key for timely and cost-effective implementation



SMO by lemonbeat comes in **two** formfactors for max flexibility and use

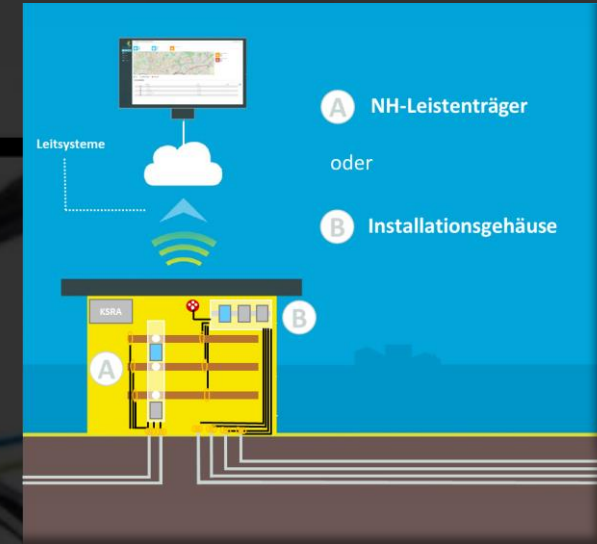
All-in-One NH busbar carrier



All-in-One Installation Box



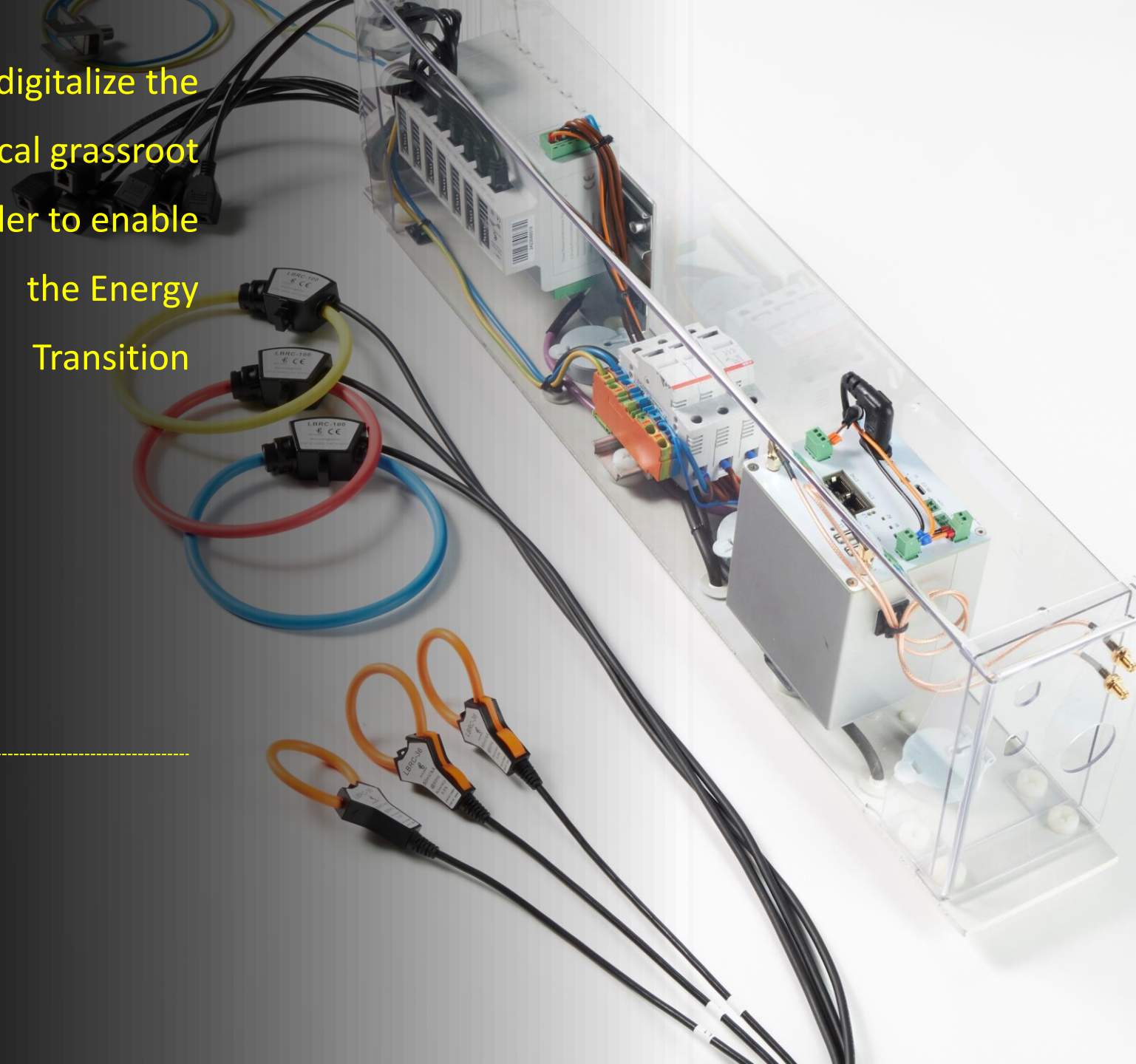
- All components within device/no wiring effort inside station
- No cable clutter, thanks to safely detachable Rogowski coils – clearly & intuitively labeled
- Scalable up to 20 outlets (3-phase measurement)
- Voltage tapping directly on the busbar or via a 400V cable
- Temperature-resistant up to $>70^{\circ}\text{C}$
- Modbus Gateway with LTE and external antenna connections for secure reception
- Fully interface-compatible with existing systems



- Installation in 15-20 minutes, maintenance free
- Measurement of all important parameters, transmitting to our intuitive web application with alarm messages in real-time, operating parameters in detail & as time series for analysis
- Quick localization of faults through connection to the Short-Circuit Direction Indicator (KSRA) via Modbus or DI
- Direct connection to **envelio** IGP (intelligent grid platform)



We digitalize the
physical grassroots
in order to enable
the Energy
Transition



Oliver Obitayo - CCO

Revierstr. 3

44379 Dortmund

Mail: oliver.obitayo@lemonbeat.com

Phone: +49-172-1804484

