

DISTRIBUTED GENERATION / OFF-GRID: SUMMARY



- ❑ Distributed generation (DG), led by photovoltaics (PV) & energy storage (ES), is becoming a prominent force in remote areas and frontier markets, driven by:
 - declining PV & ES costs
 - 'smart'/digital technologies
 - environmental/development concerns (e.g. SDG7)
- ❑ .. and facilitated by innovative business models and funding schemes
- ❑ Pay-as-you-go (PAYG) solar (generation) was the first segment to take-off, followed by grid-oriented business models
- ❑ Emerging service opportunities include energy efficiency, HVAC, refrigeration
- ❑ The off-grid market is spreading to Asia (SEA, India ...) and to larger projects, for the latter proving to be a compelling solution for: commercial and industrial (C&I) and energy access needs; grid balancing & utility tasks; satisfying mines, military and campus requirements



- ❑ Energy/Power majors - facing disruption in their traditional markets - are ambitious in relation to energy access goals in frontier markets as well as actively embracing decentralised technologies and B2B/B2C offerings in their core markets; acquisitions or JVs with start-ups are an integral part of that strategy
- ❑ Large (smart) grid OEMs are expanding their portfolios - new controller products, either an integrated control system or software platform for small-scale grids, facilitating the combination of multiple generation sources (electricity grid, diesel, PV and ES) even for relatively small sites