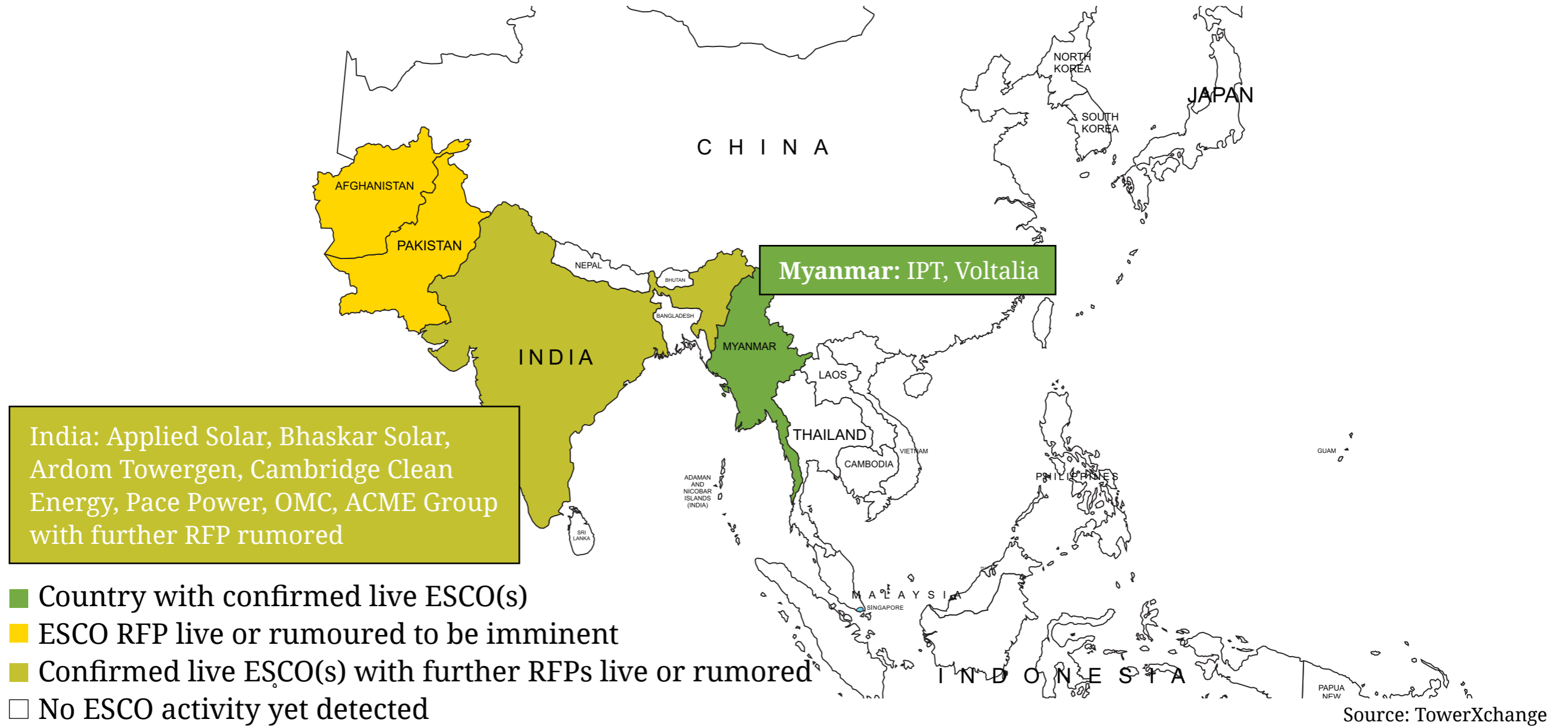


Energy Services Companies (ESCOs) achieve launch velocity

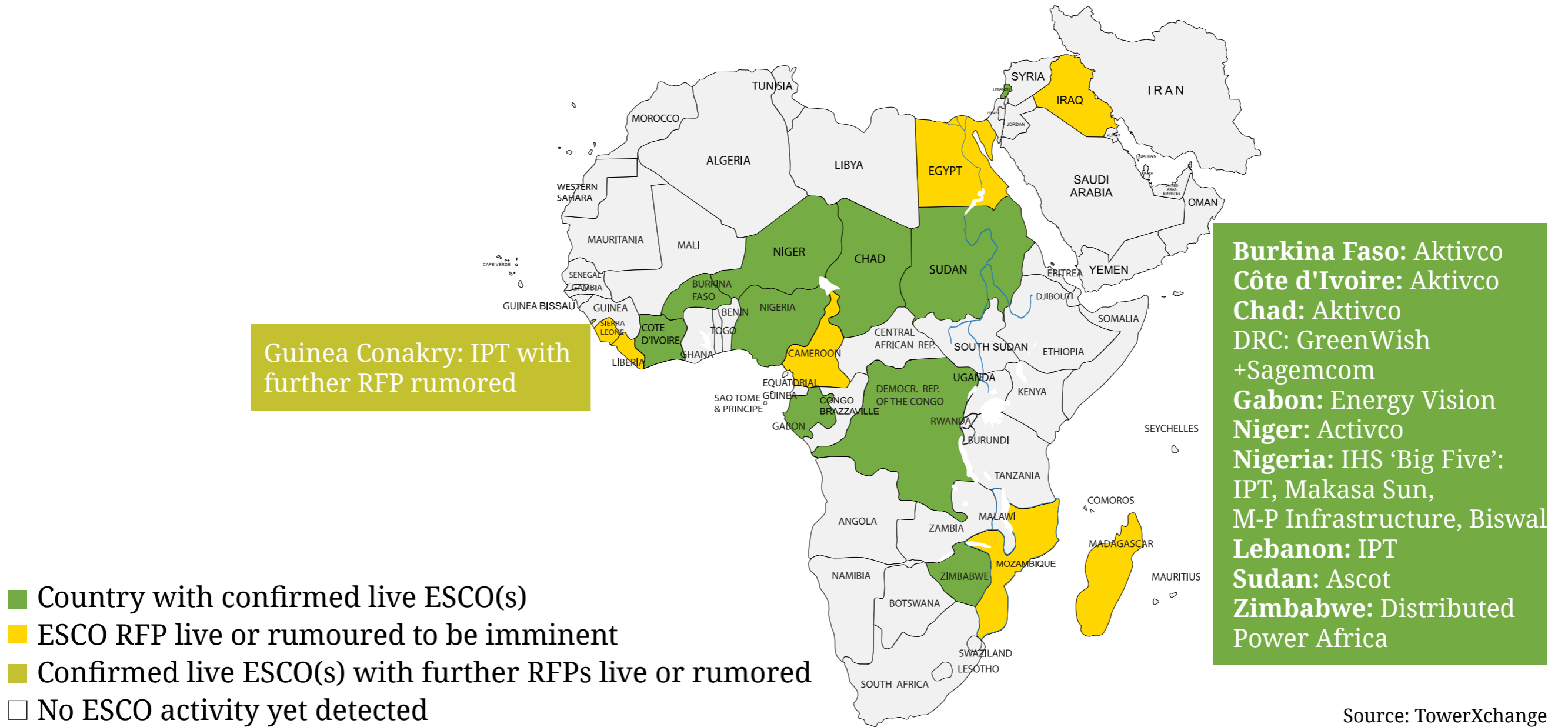
Presented by Kieron Osmotherly, Founder and CEO, TowerXchange



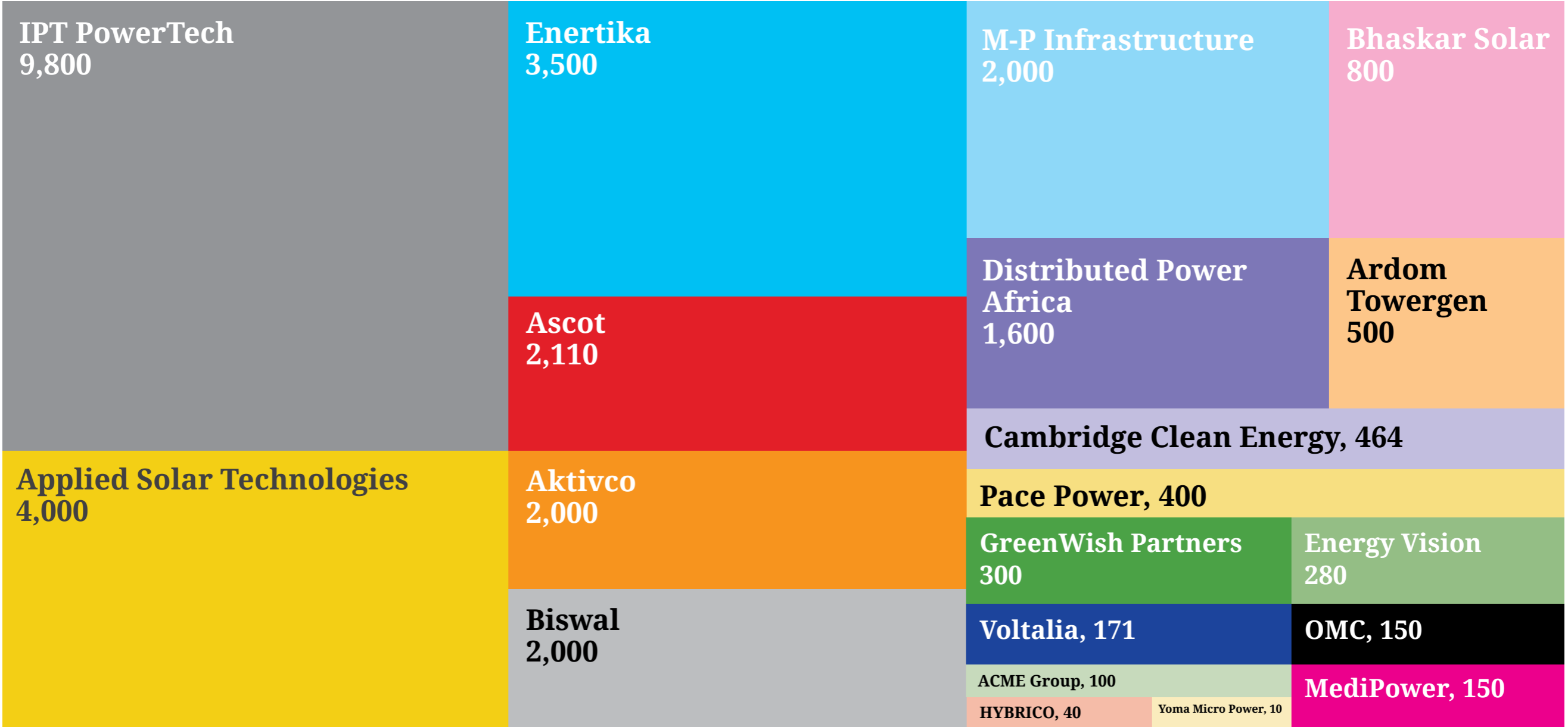
Current and prospective ESCO projects, Asia



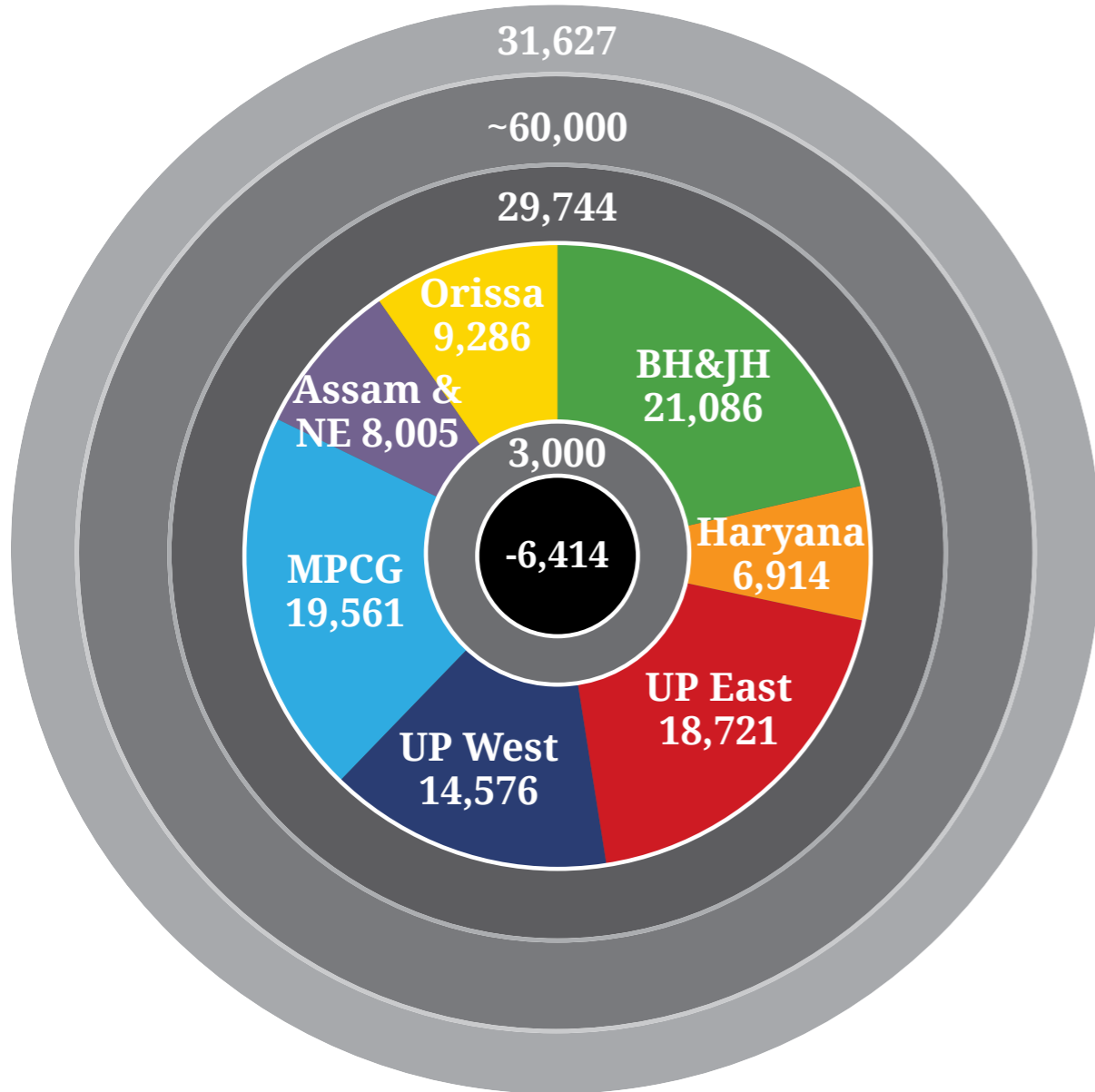
Current and prospective ESCO projects, MEA



The fragmented global ESCO market, by site count

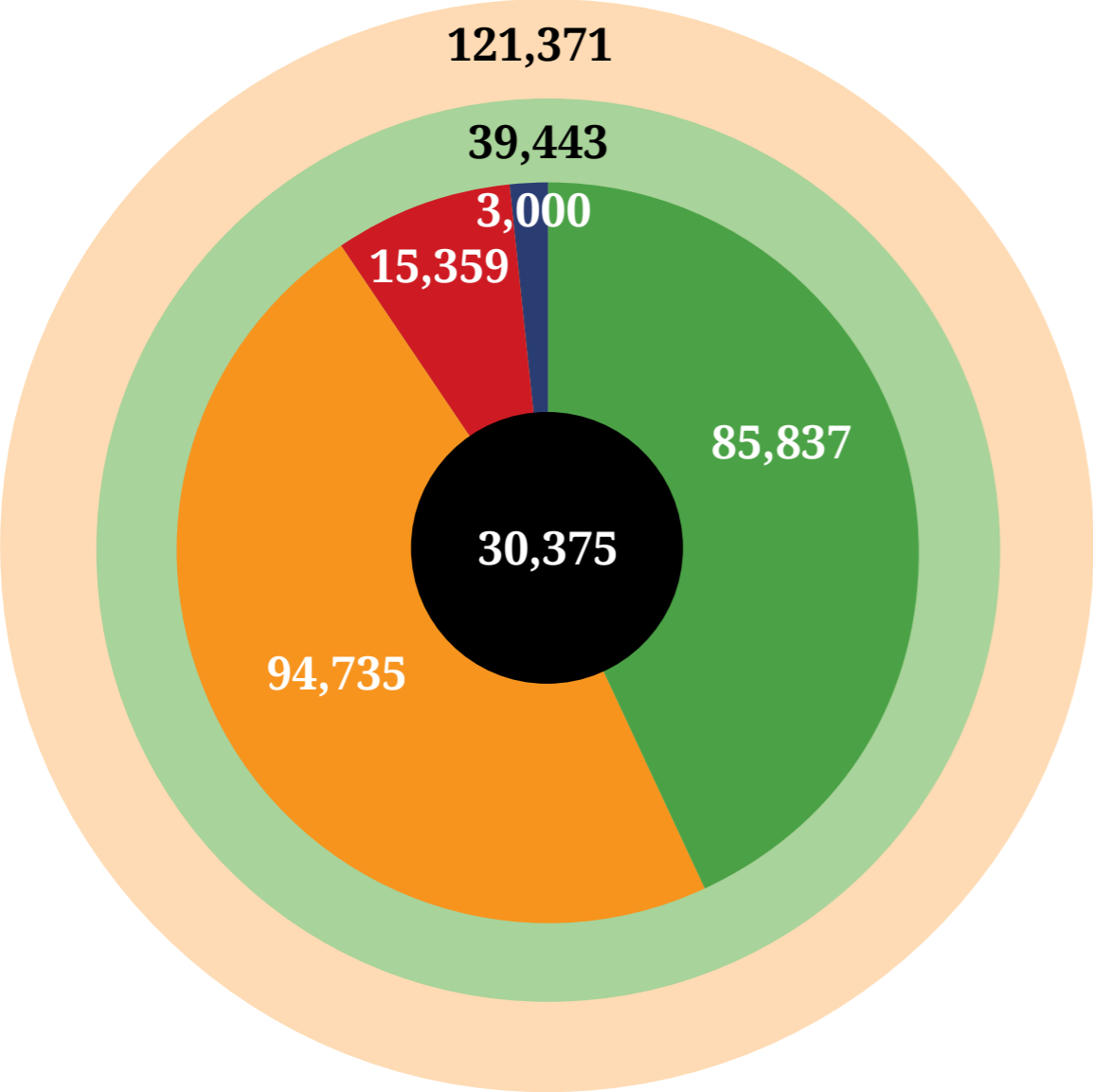


The addressable market for ESCOs in India



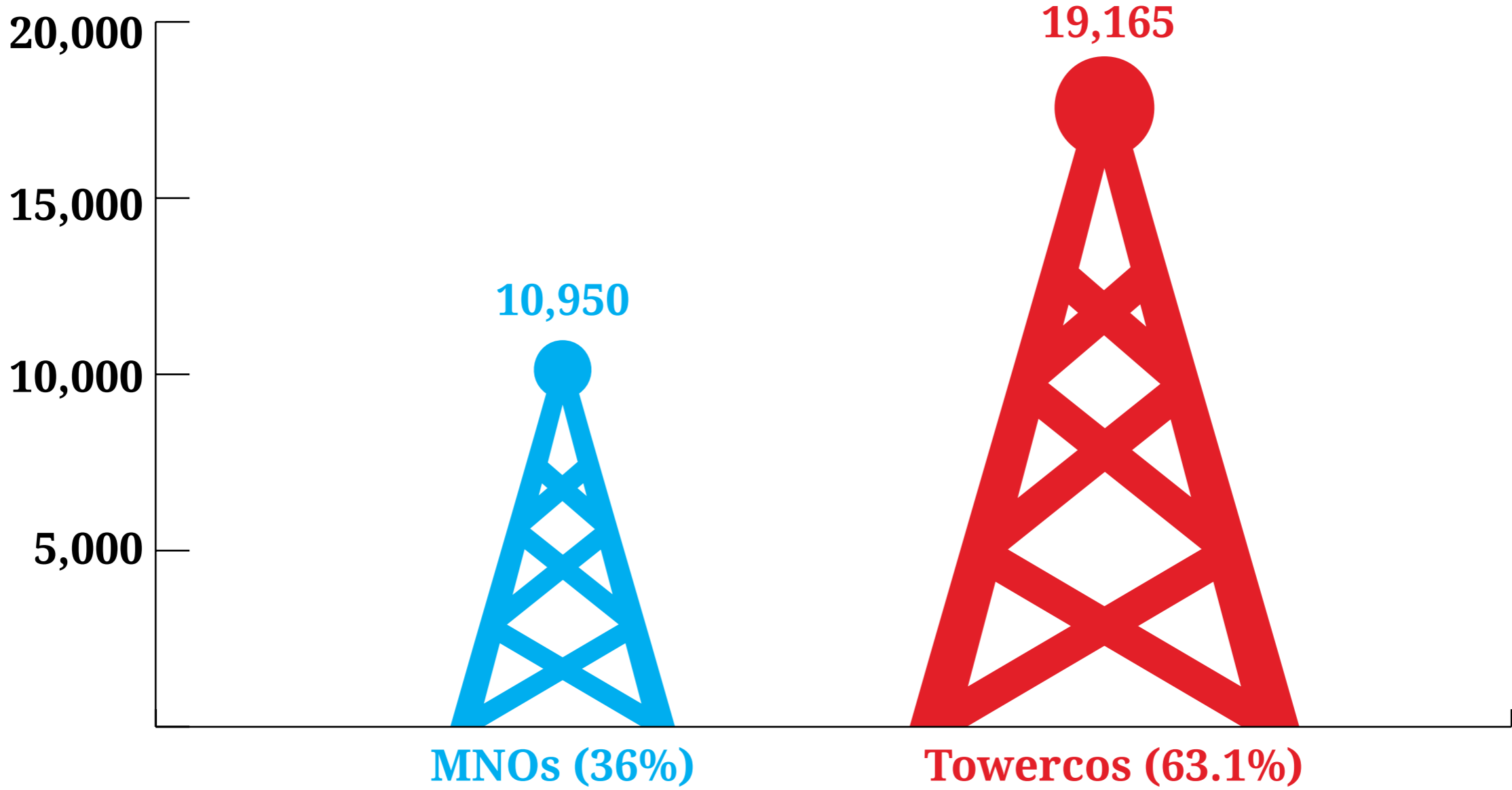
Already under ESCO contract (inc in the near term prospect section)	-6,414
BSNL	3,000
Near-term prospects, sites in states with <8 hour usable grid	3,000
BH&JH	21,086
Haryana	6,914
UP East	18,721
UP West	14,576
MPCG	19,561
Assam & NE	8,005
Orissa	9,286
Medium term prospects sites	29,744
Sites with 8-16 hours usable grid	~60,000
19% of on-grid sites in India	31,627

The global 389,920 site addressable market for ESCO



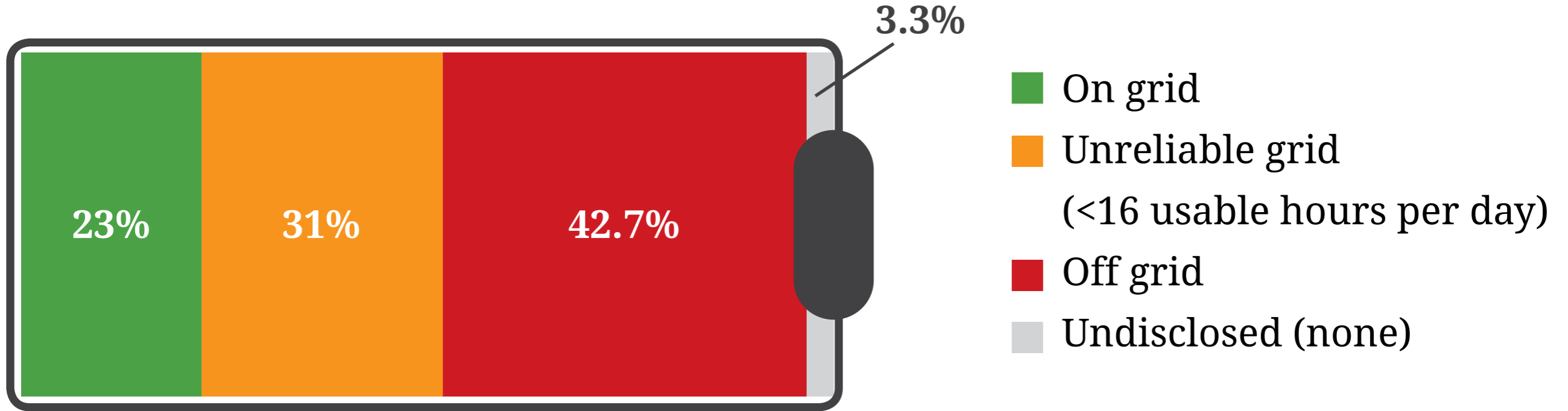
- Already contracted by ESCOs
- MEA, short to medium term
- India, short to medium term
- Rest of Asia
- CALA and Europe
- MEA, medium to long term
- India, medium to long term

ESCO sites anchor tenants worldwide: MNOs compared to towercos



Source: TowerXchange

ESCO sites by grid status



Source: TowerXchange

Diamond Sponsors:



Silver Sponsors:

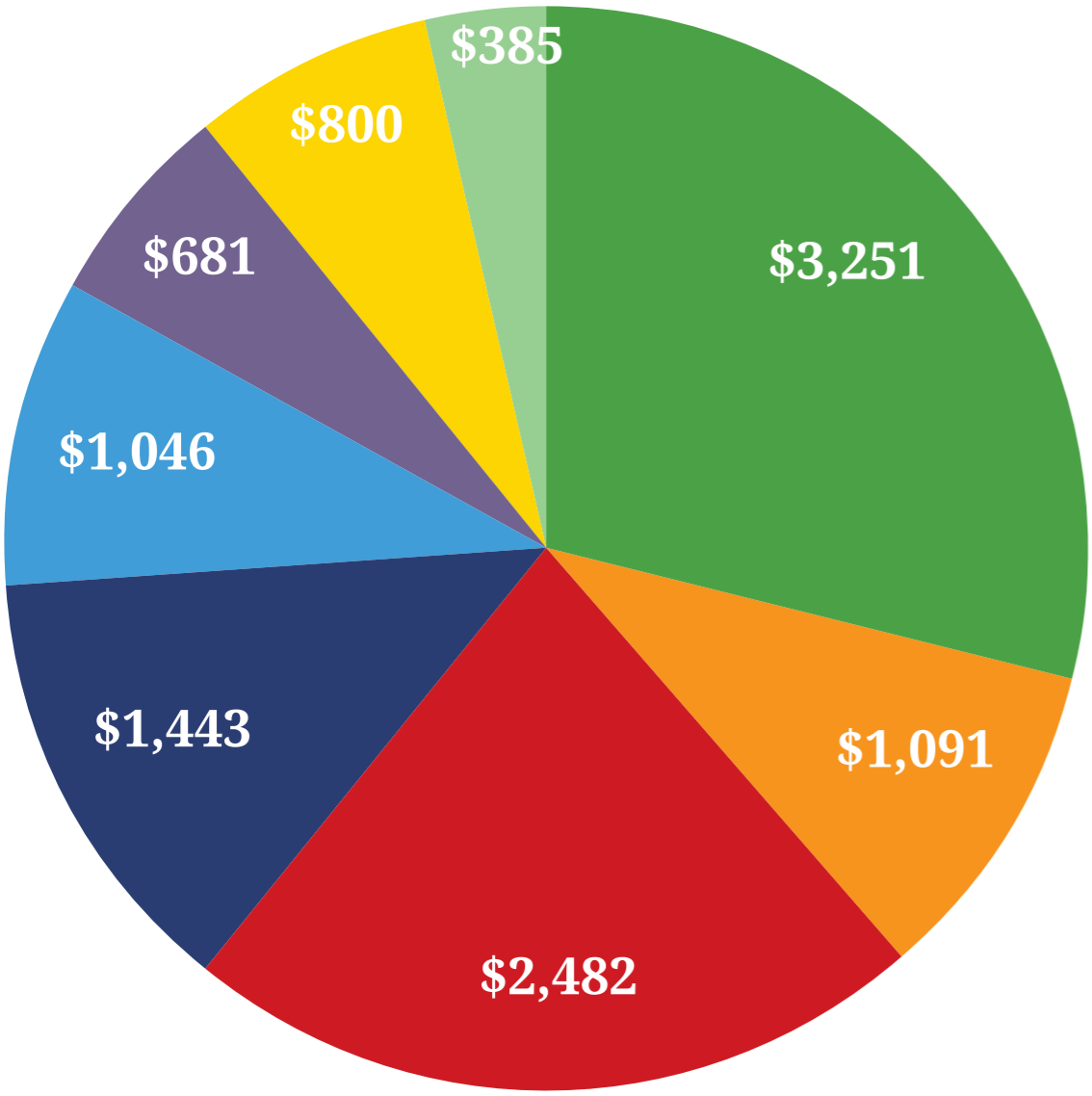


Bronze Sponsors:



Example capex invested into an Indian ESCO site

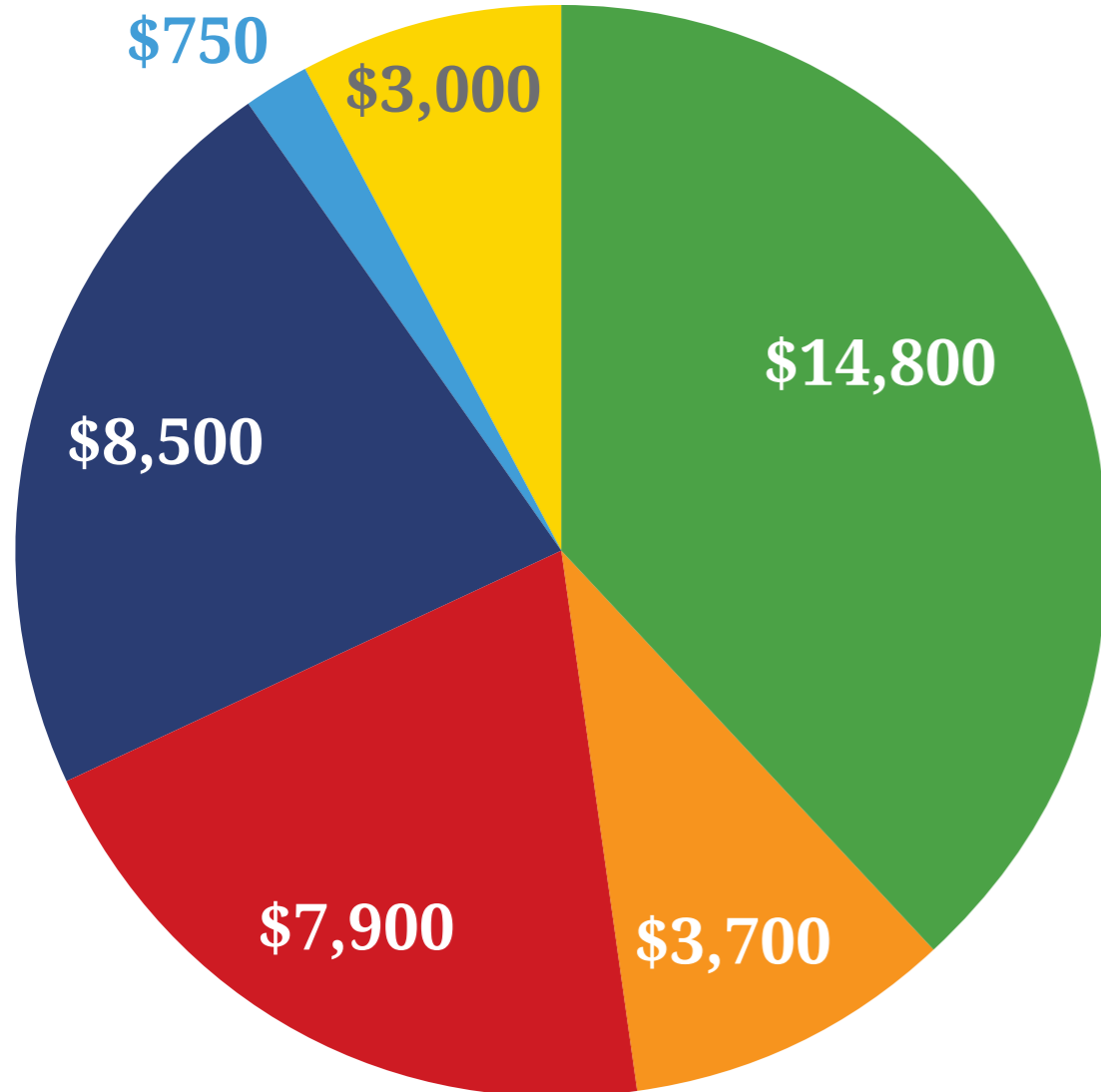
India example: 6kW solar, 750AH battery capacity: total capex \$11,179



- Battery bank
- Foundation + OD Pad
- OD Rack, pole and fabrications
- MPPT
- Electrical works
- Warehousing, freight and survey
- RMS
- Supervisory manpower

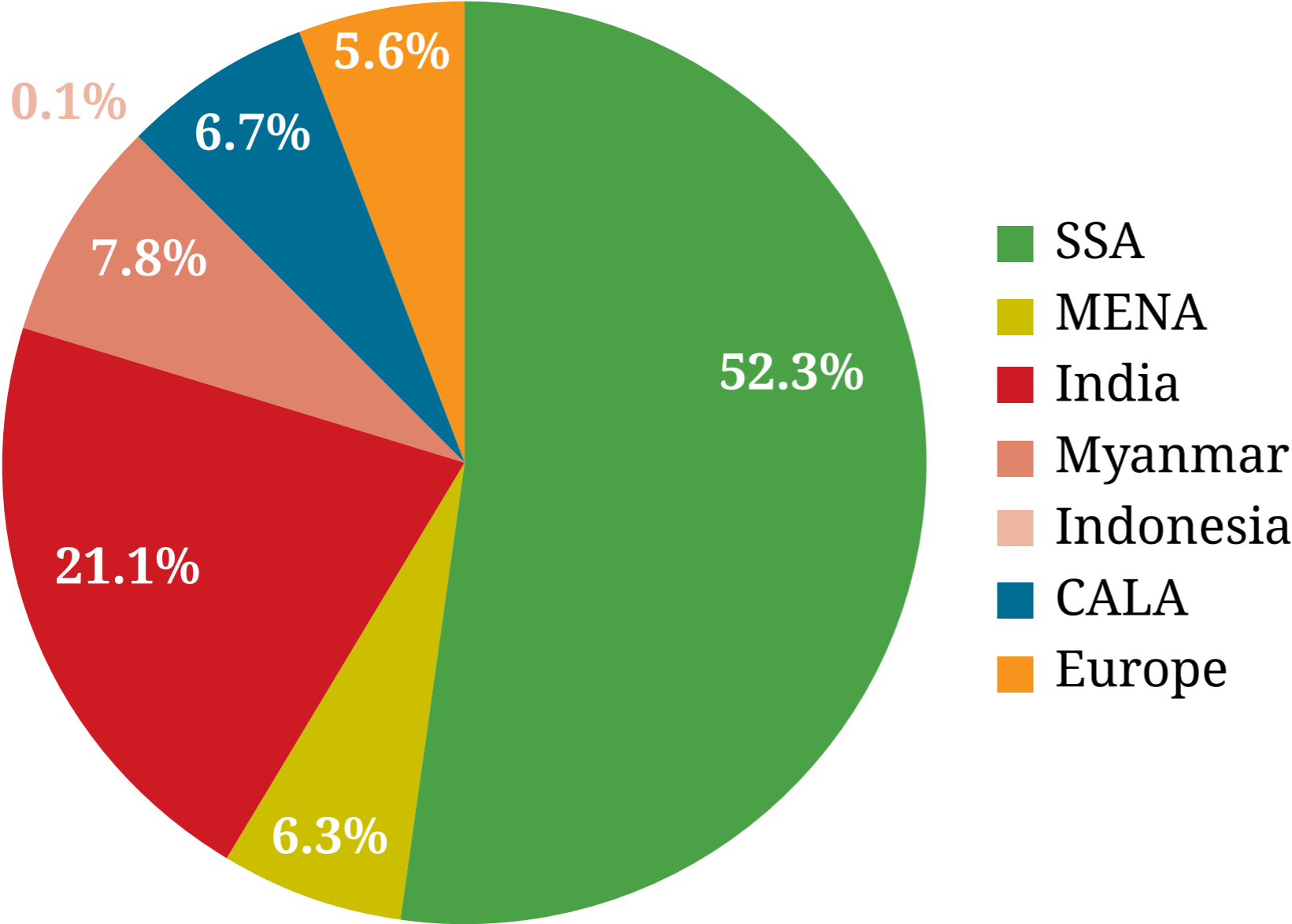
Example capex invested into a SSA ESCO site

4.5kW solar, 1,000AH battery capacity: total capex \$38,650

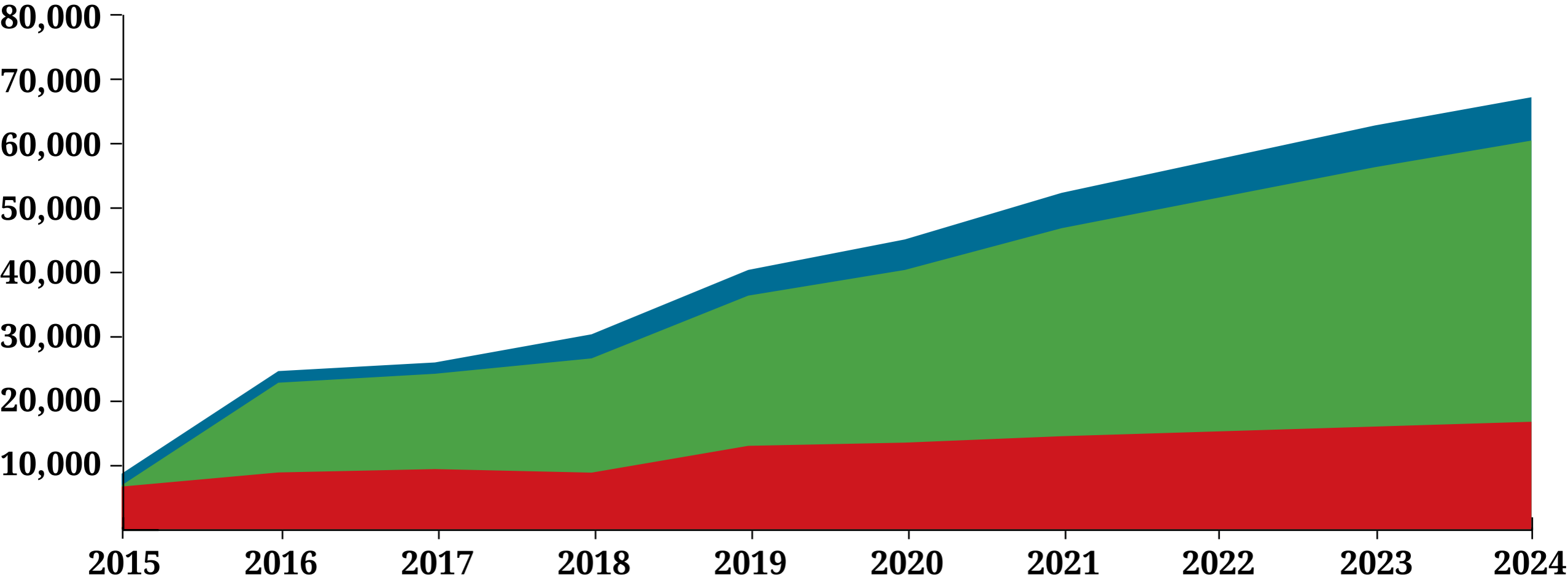


- Battery, cabinet and accessories
- Solar system
- Hybrid cabinet (core, controllers, solar chargers, rectifiers, AC&DC dist.)
- Genset, controller and fuel tank
- Installation materials
- In-country logistics and installation

ESCO sites by geographical market



TowerXchange forecasts ESCOs will have 67,300 cell sites by 2024

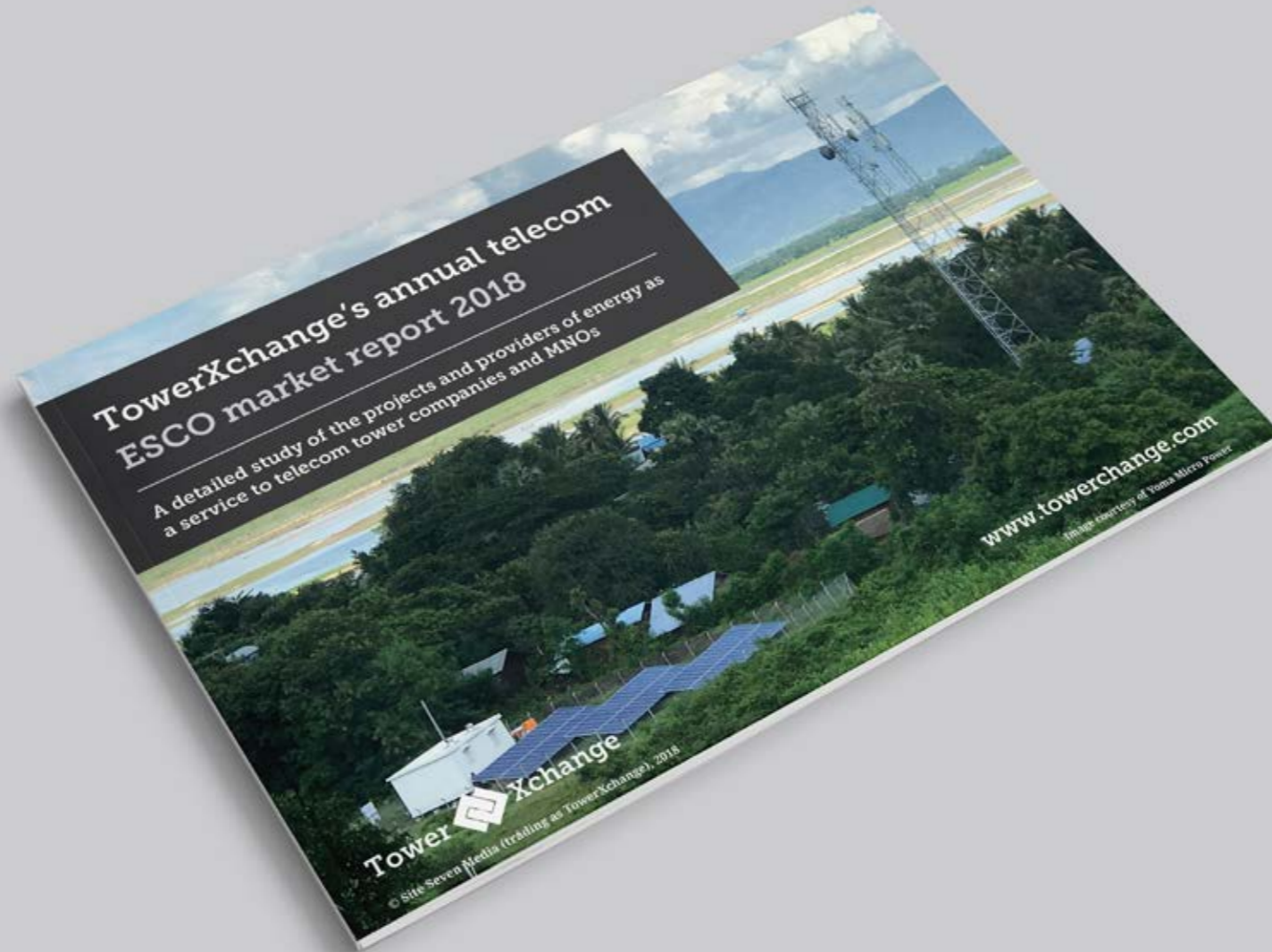


Source: TowerXchange

- ESCOs have achieved launch velocity
- ESCOs will own the power systems at ~20% of the world's off grid and bad grid cell sites by 2024
- ESCOs push beyond towercos in energy efficiency
- ESCOs compliment rather than competing with towercos

“Generally speaking, in markets where we have a small number of towers, our plan would be to hand the full portfolio over to an ESCO, whereas in our larger markets it will most likely be a subset of towers” - ***Nat-sy Missamou, Orange MEA***

Data from TowerXchange's annual telecom ESCO market report 2018



Available now at www.towerxchange.com/esco-report