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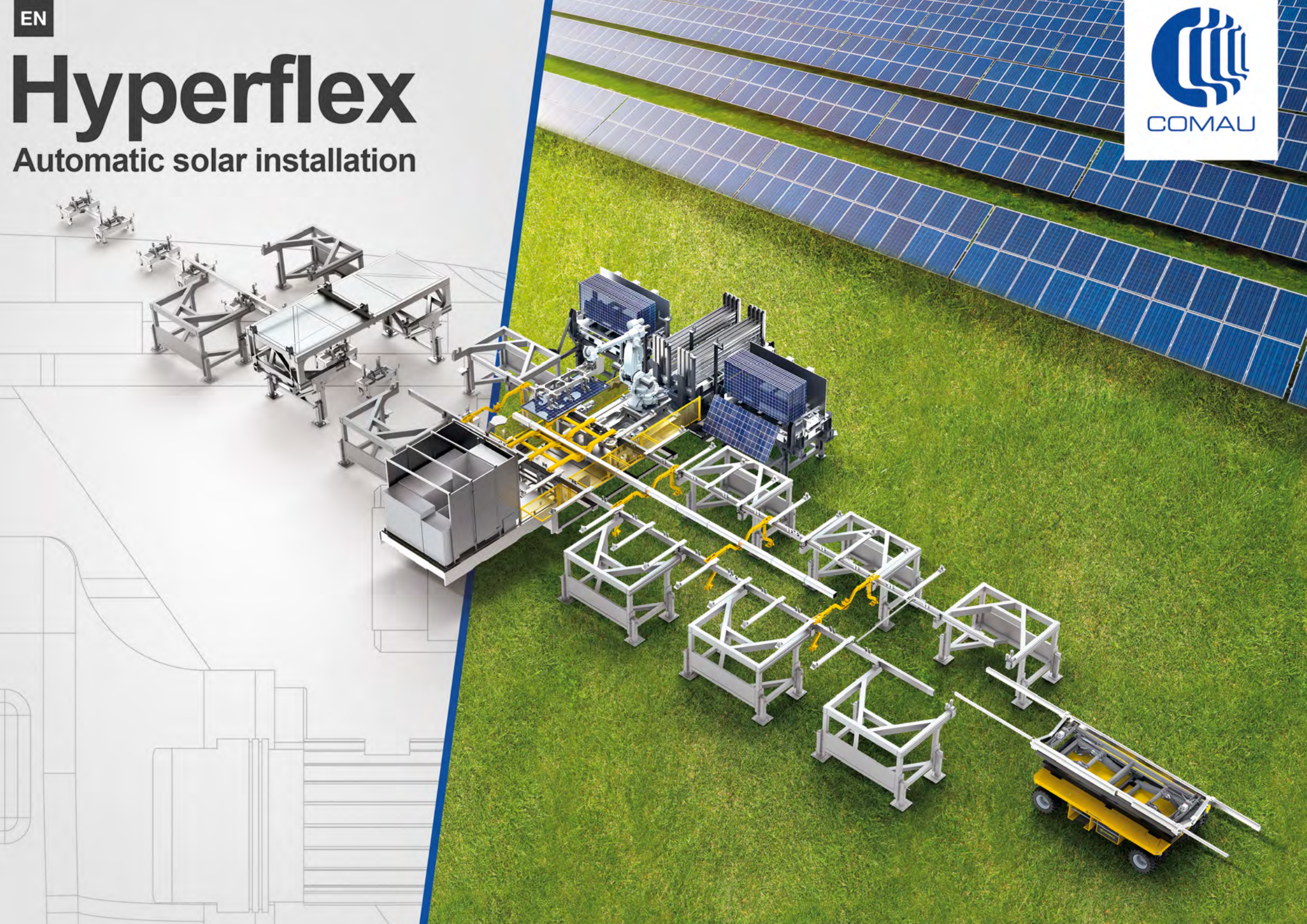
Hyperflex

Automatic solar installation



ON-FIELD AUTOMATIC TRACKER INSTALLATION

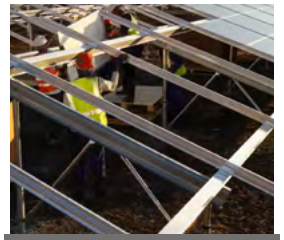
Enabling the transition from Construction to Manufacturing

Pole insertion — **Land removal** — **Cables positioning** — **Land filling** — **Pole raise leveling** — **Structure bars**

Hyperflex application area

Torque tubes

Transversal beam



Panel positioning

APPLICATIONS

Applications	**PV Solar plants construcion**

TARGET MARKETS/CUSTOMERS

Market	**Solar**
Customers	**EPC (Engineering, Procurement, Construction) companies operating in Solar market; utilities, solar trackers manufacturers/installers**

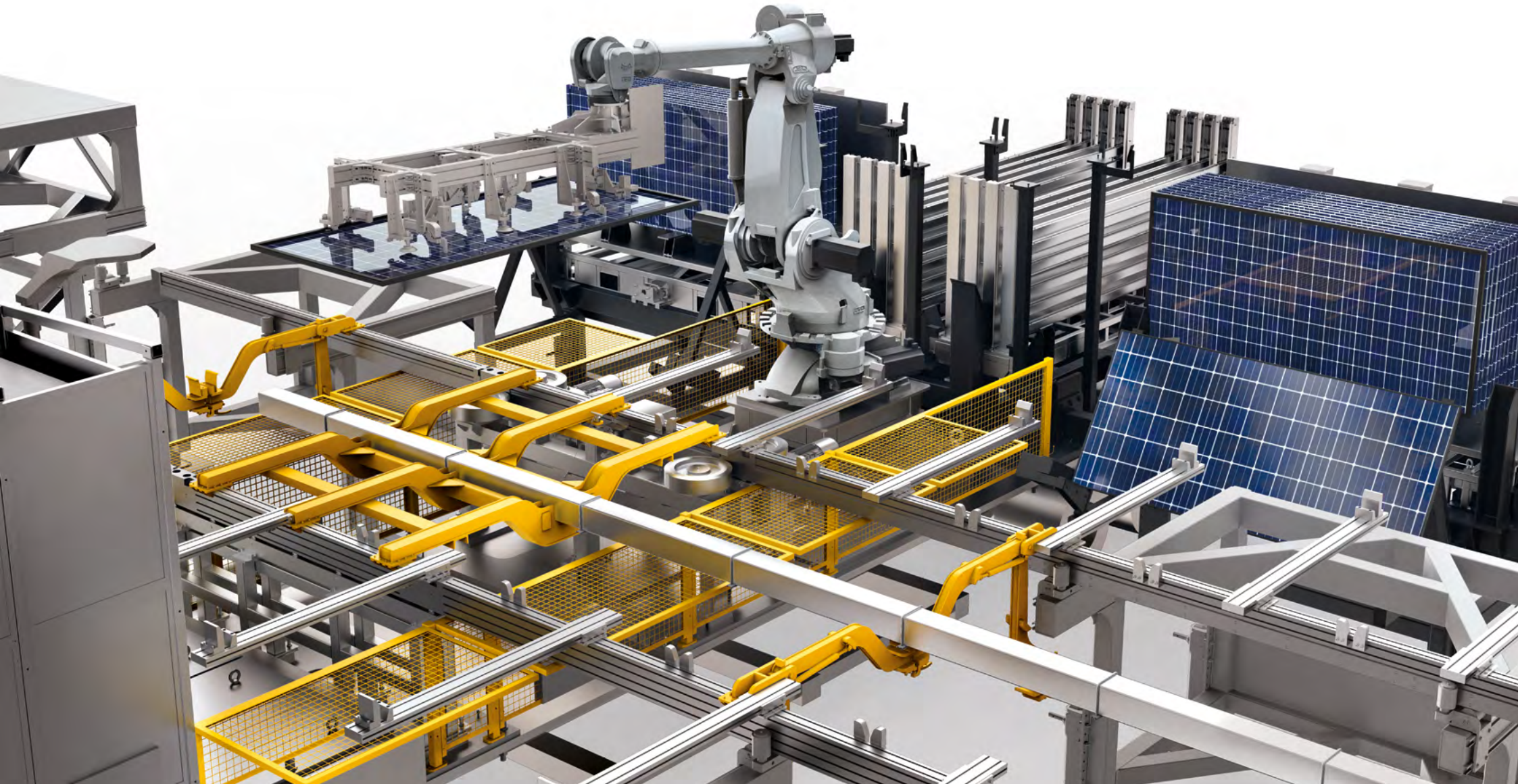
Outdoor mobile temporary factory for photovoltaic plant manufacturing.
Inside this factory, solar trackers are pre-assembled and then shipped to their final location with a trailer equipped with a custom lifting equipment able to handle this huge structure.

The entire solution is patented by COMAU.

HYPERFLEX

Automatic solar installation

1.



Scalability
Installation rate is linearly proportional to labour hours: limited availability of human resources in some regions where EPC is committed to install new capacity

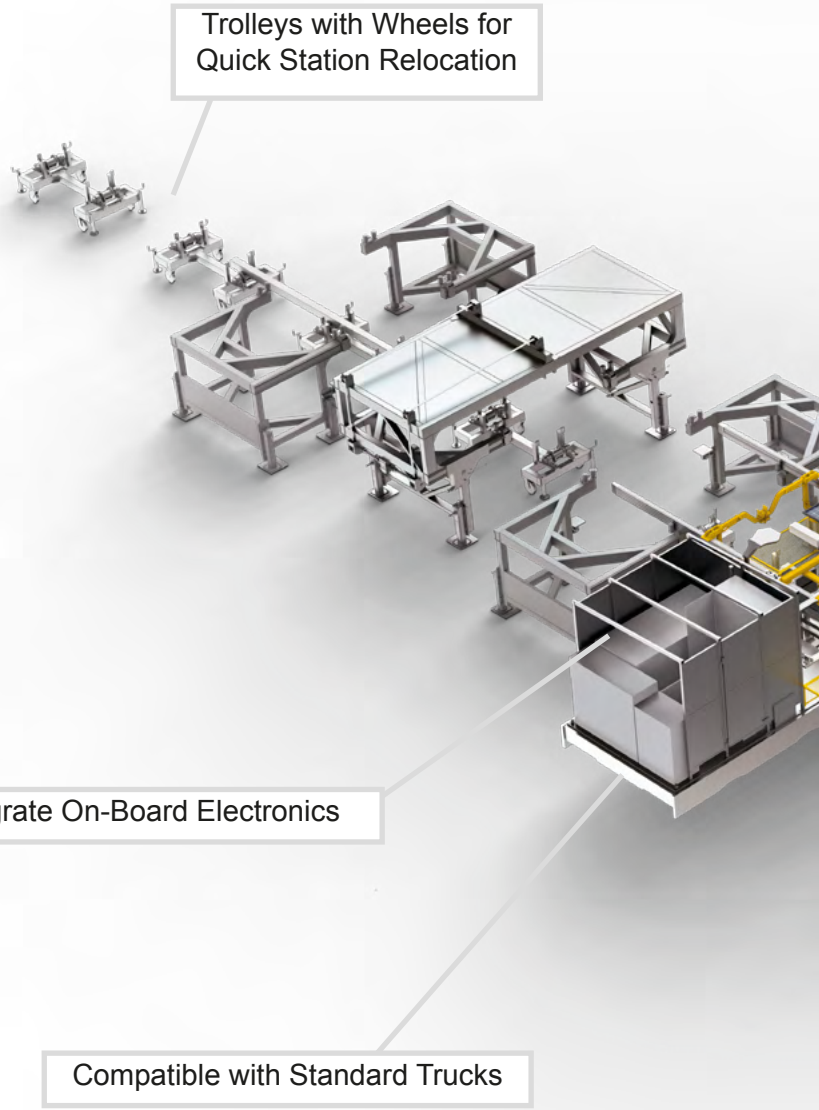
Health and Safety
Labour related accidents could slow down or stop solar plants installation resulting in missed production or commissioning delay Health & Safety expenses are predicted to grow linearly proportional to labour hours

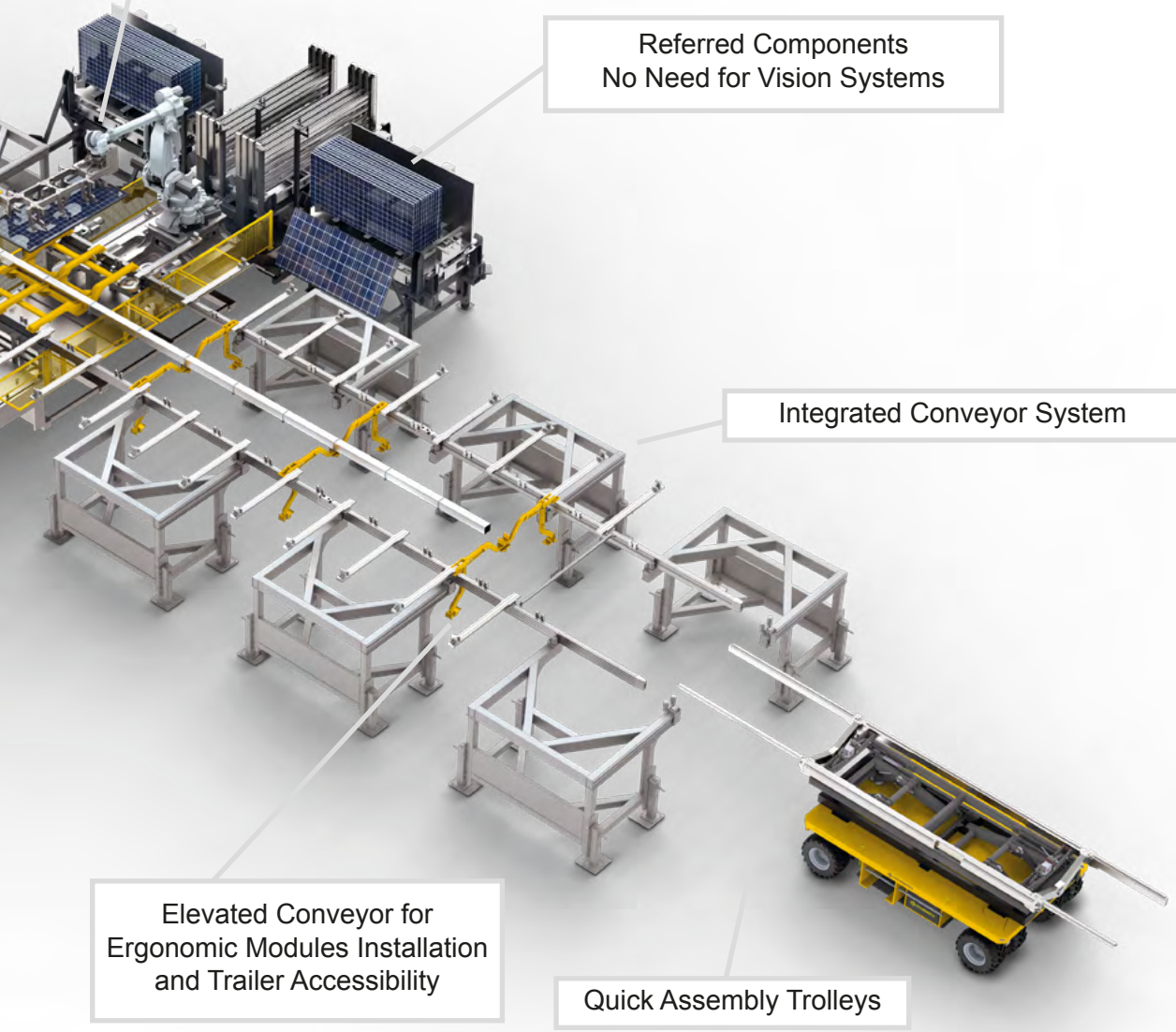
Labour Price Inflation
Labour cost inflation has a direct impact on profitability of overall projects

Time to Market
Strong deadline commitment towards customers regarding production start
Resources are not yielding returns while still in construction

Competitive Pricing
Photovoltaic panels cost reduction is flattening; next big cost reduction must come from installation as it is still one of the few sub-optimal areas

Price Transparency
Current improvement in the installation process of Solar farms are unevenly distributed between EPC and Utility companies





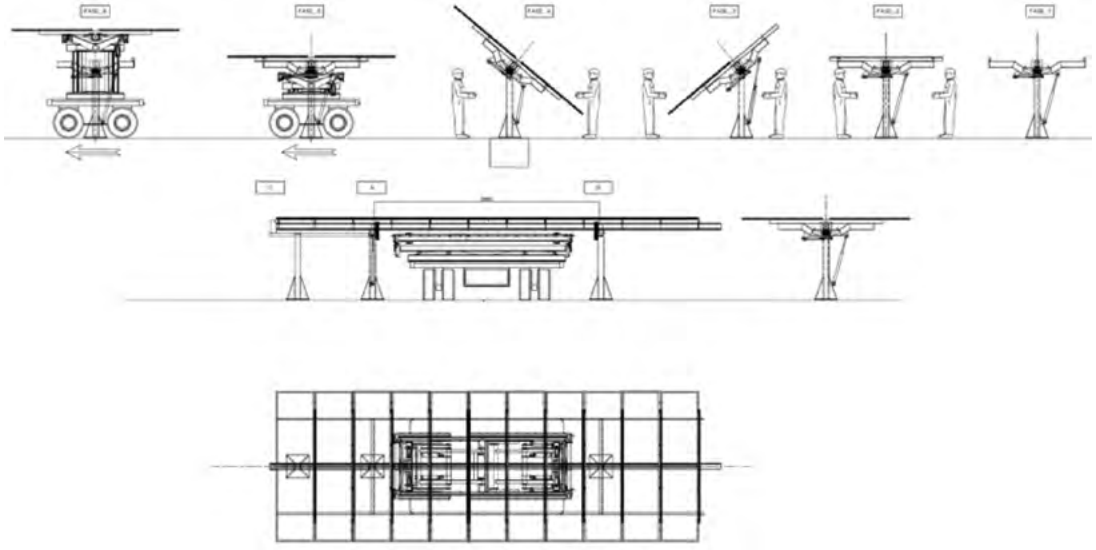
Up to 25% faster time-to-market for new PV plants
Up to 35% savings on the price per panel
Up to 30% more modules per hour per operator

Unique Selling Proposition
Enhanced Logistics: tracker components and modules are delivered to the station and the pre-assembled solar blade is then shipped to the final installation position.
Patented Lifting Equipment: lifting equipment permits accurate positioning of 50m2 solar blade with lifting, pitching and rolling controlled movements

Productivity	**60PV Modules/Hrs/Station**
Floor Space	**14x38 mq**
HypérFlex Station Reach	**660m diameter**
Installation Performance	**270 Man-hours/MW**
Availability	**24/7**
Tracker Configuration	**2P - 1P**
Operators per Shift	**17 Operators / 2 Station**
Commissioning	**2 shifts / 4,5 operators**

2. MINI FLEX

A compact logistics solution featuring the Hyperflex rover without its dedicated lifting equipment. Mini Flex is a highly efficient mobile system that facilitates the transportation of assembled panels from the production area directly to the field.



Power	**Electric**
Autonomy	**3 battery slots, up to 8 hours**
Recharge	**Possibility for battery replacement**
Weight	**8 tons**
Dimensions	**L:4600 W:2500 H:1800**
Guidance	**1 Operator**
Payload	**solar blades up to 1 ton**
Load Bearing Capacity	**agricultural soil down to 0.33kg/cm2**
Max Speed	**6 km / h with 10% ground slope**
Degrees of freedom	**Vehicle** **Front motion** **Lateral motion** **Parallel wheels motion** **Carousel** **Lifting equipment** **Pitching (+/- 20°)** **Rolling (+/- 5°)** **Pushing (200mm)**
Working hours	**up to 8 hours with 3 batteries**
Battery specifications	**Lead battery, 48V 1620Ah**

PATENTED LIFTING EQUIPMENT

For solar blade transportation and handling

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