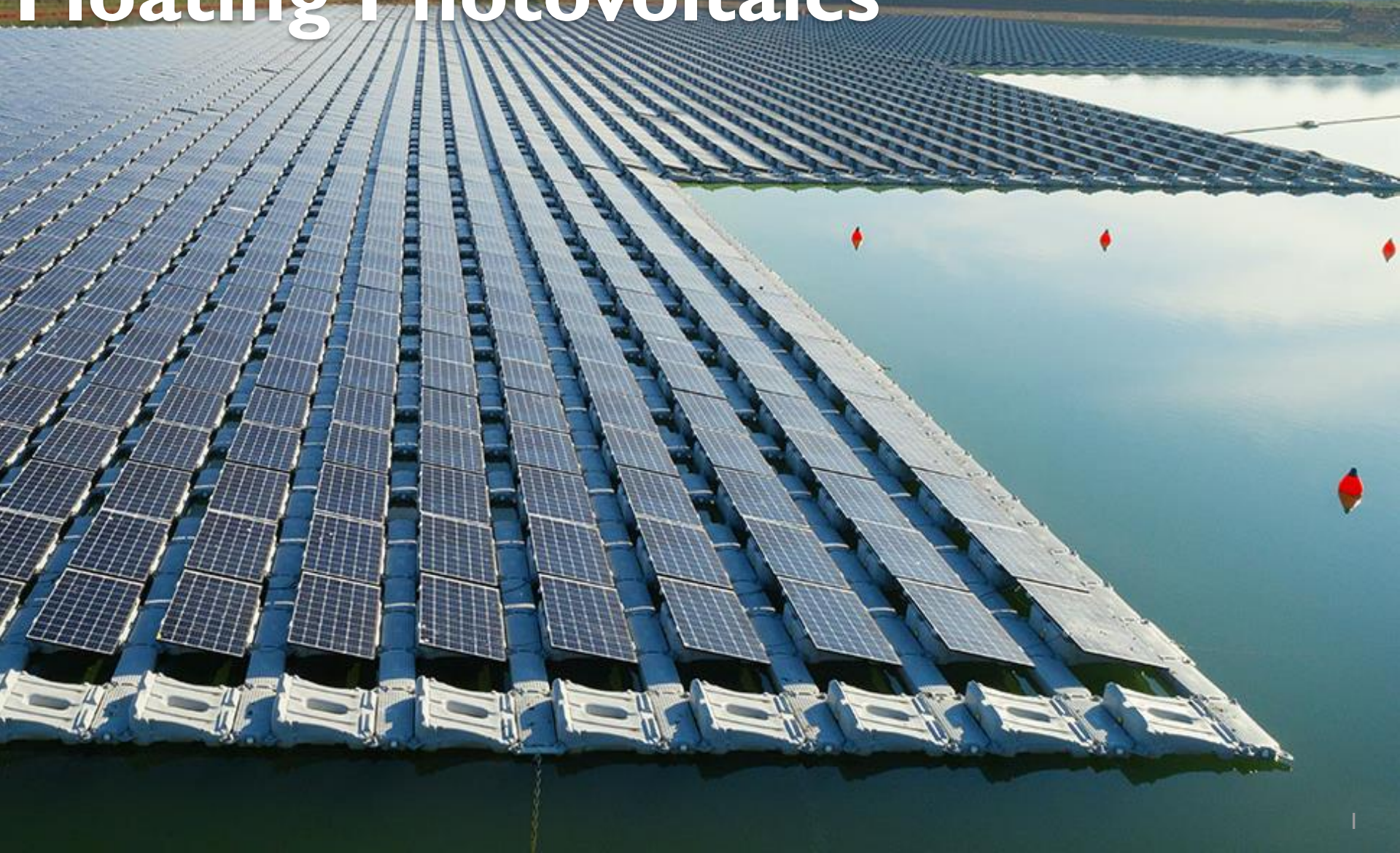


PV SYSTEMS

Floating Photovoltaics



Floating photovoltaics

FLOATVOLTAICS are PV systems supported by floating structures on body of waters

Floating photovoltaics

Benefits

Land saving

Increased Efficiency (albedo, temperature)

Reduced Evaporation of water

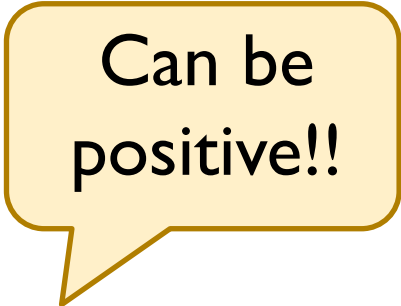
Less dust effect

Impacts

Increased costs (anchoring, O&M)

Degradation (corrosion, soiling)

Environmental and socioeconomic impacts



Can be
positive!!

Floating photovoltaics

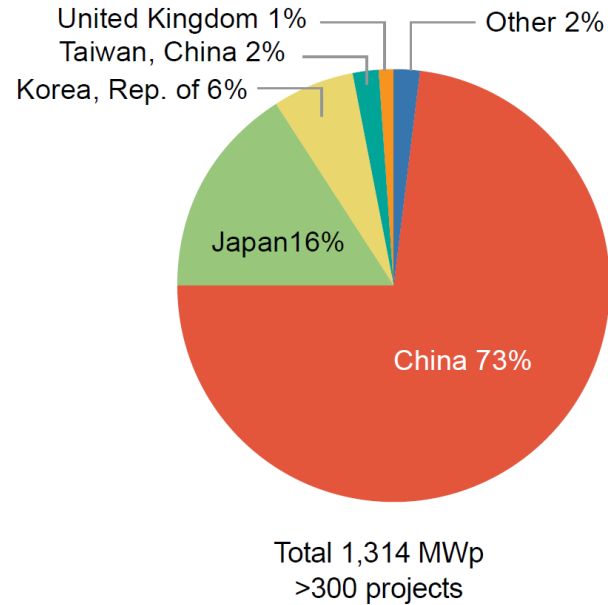
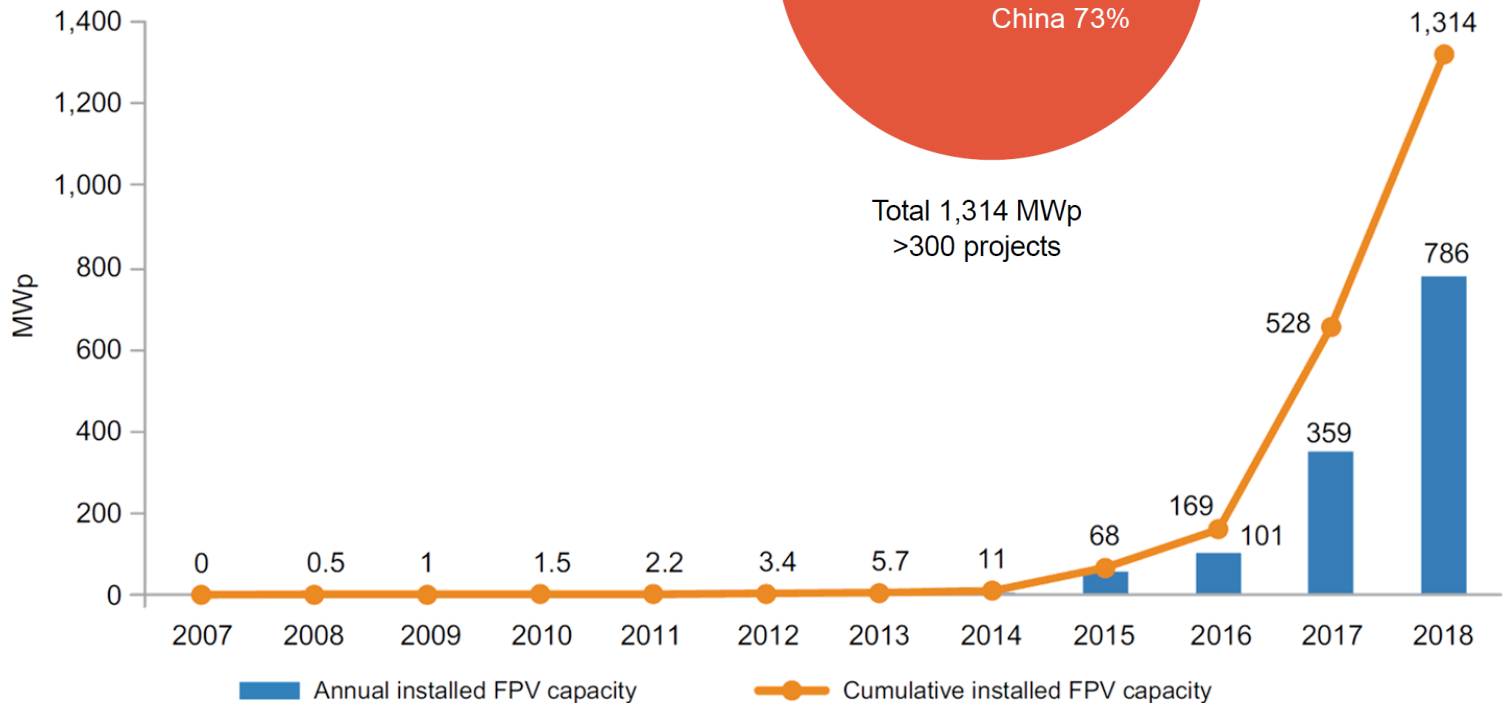


FIGURE 1.1 Global installed FPV capacity



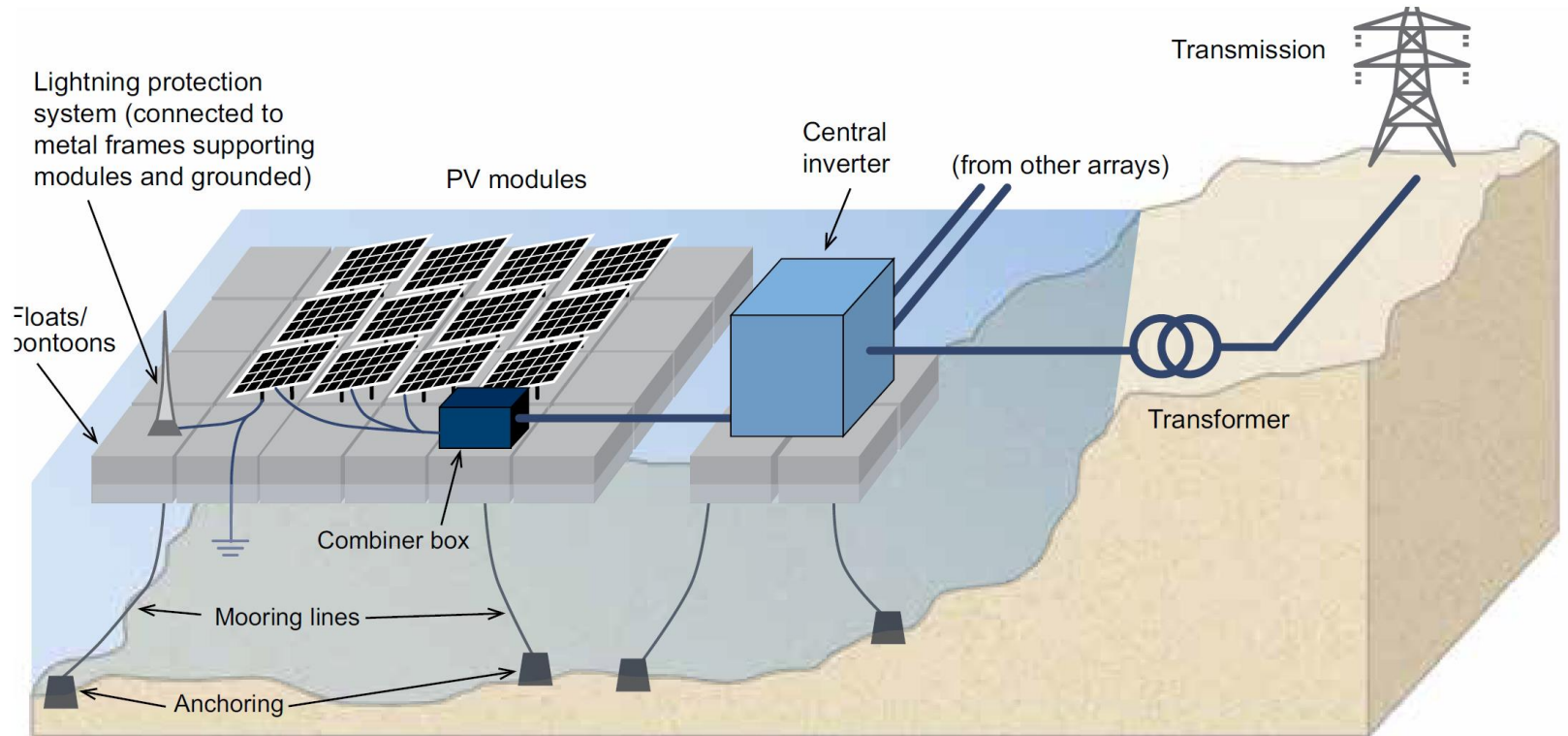
Source: World Bank Group, ESMAP, and SERIS 2019.

Floating photovoltaics

Choosing the site...

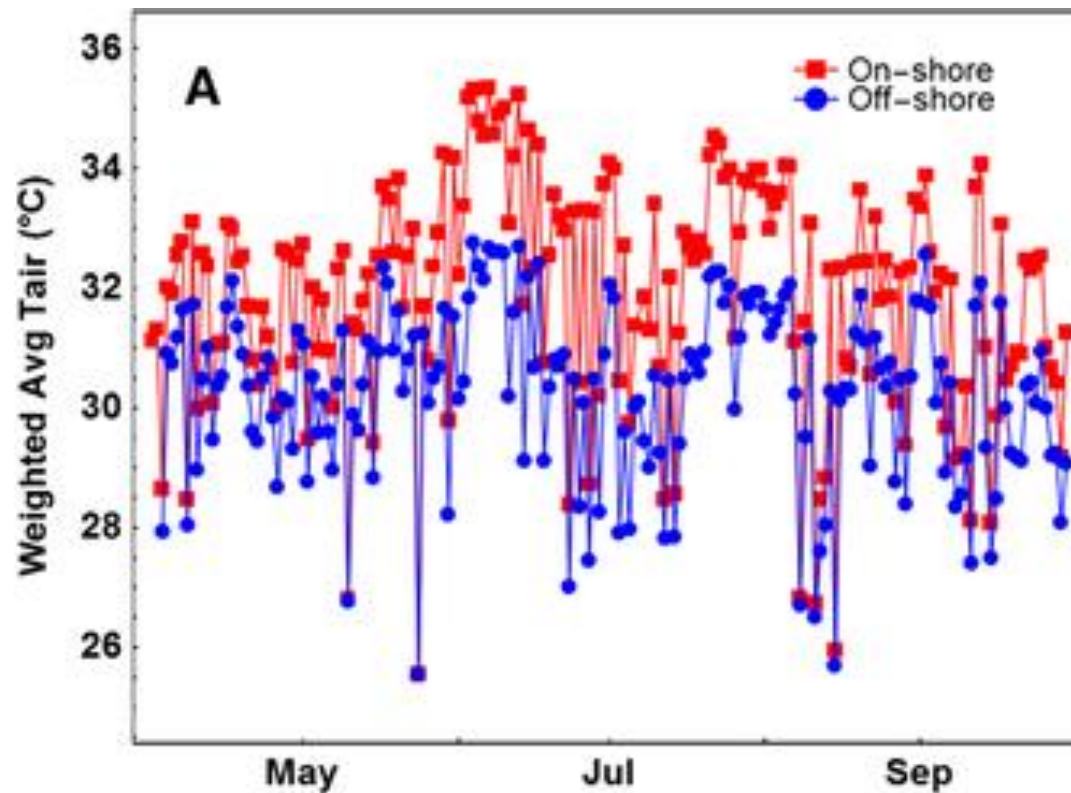
- Close to load and to the grid
- High solar irradiation and low wind (no freezing water)
- Preferrably fresh water
- No competition with recreational uses
- Avoid natural habitat of preserved species

Floating photovoltaics



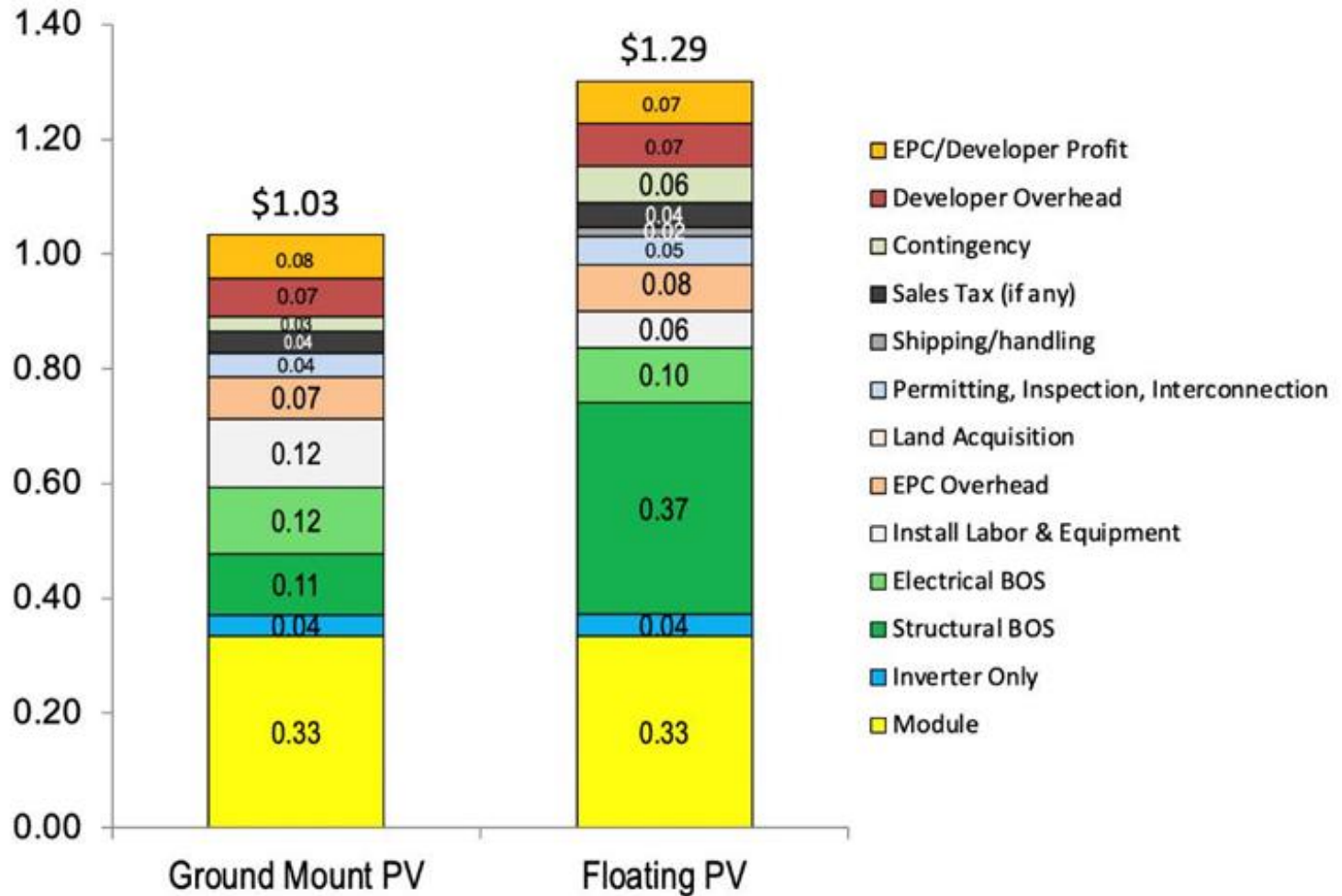
Floating photovoltaics

Relevant decrease in operating temperature >>> increased efficiency



Floating photovoltaics

\$/W_{DC} 2020 USD

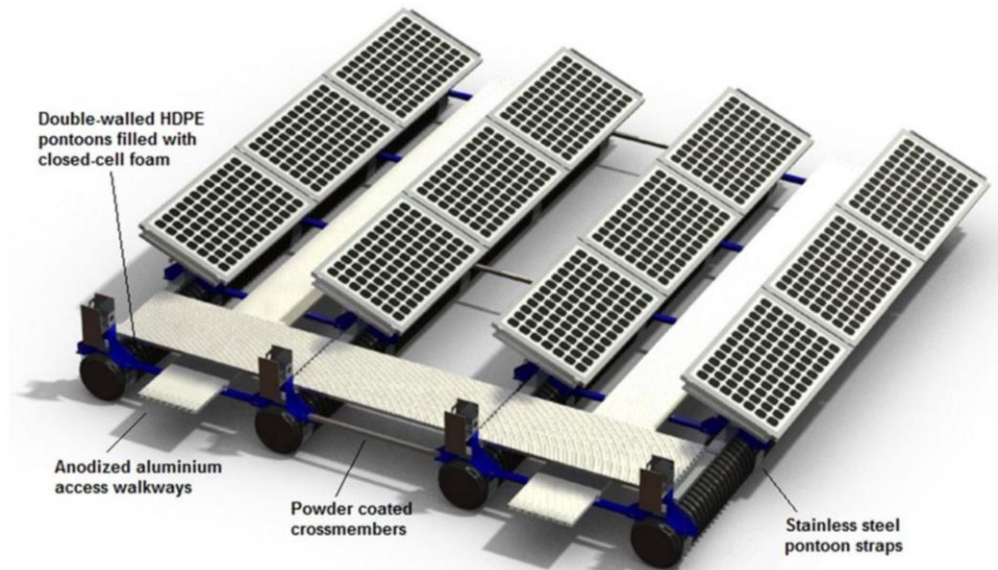


Floating photovoltaics

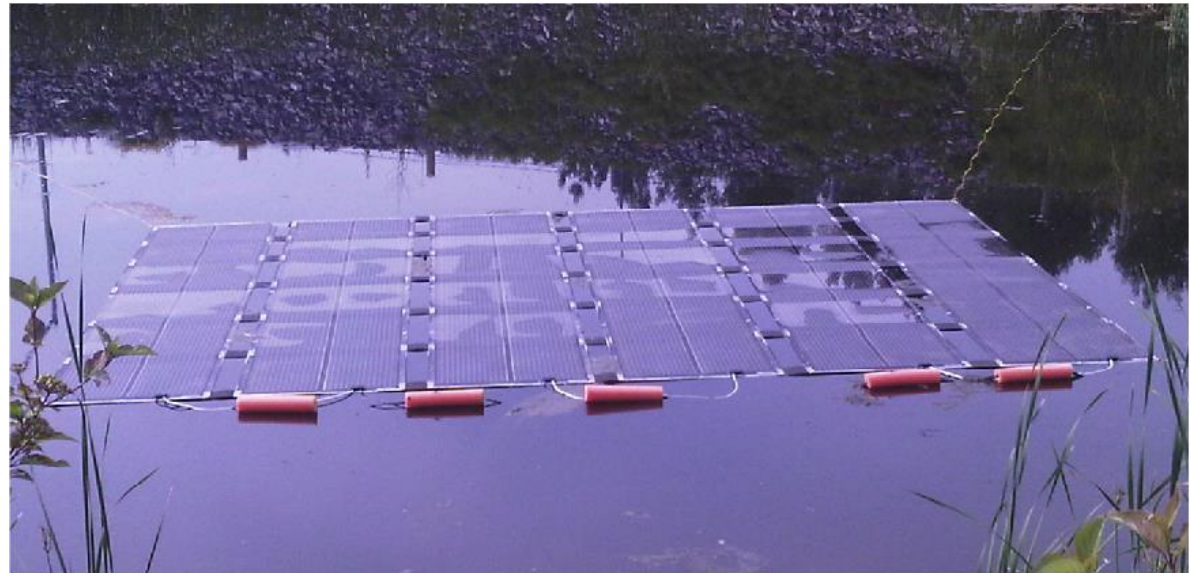
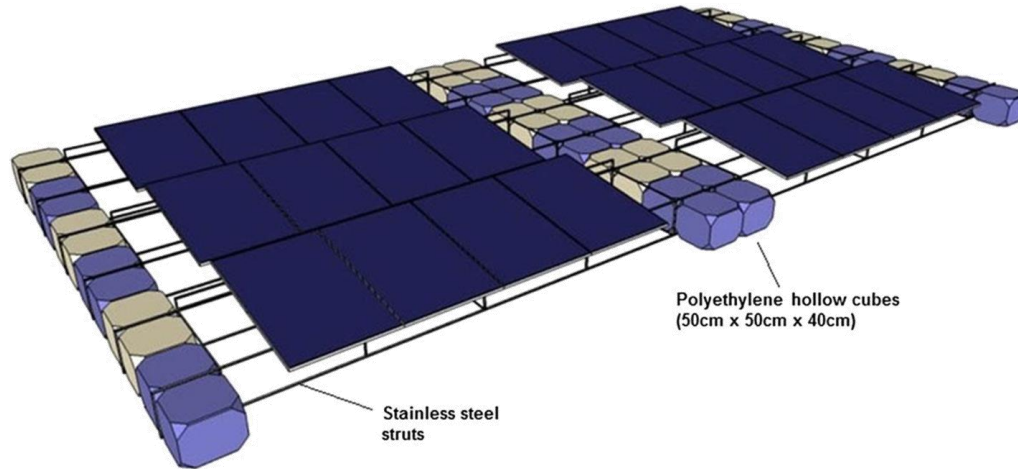
Dropping from seabirds
may be a O&M challenge



Floating photovoltaics



Floating photovoltaics

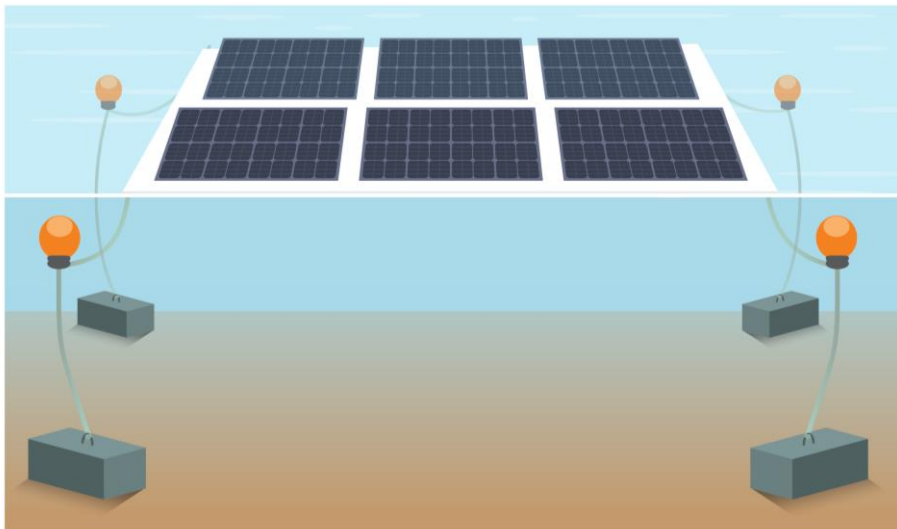
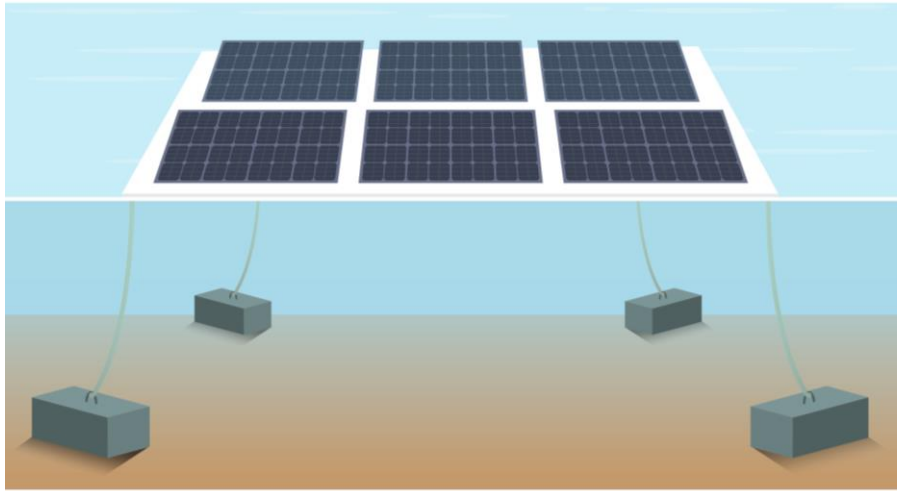


Floating photovoltaics

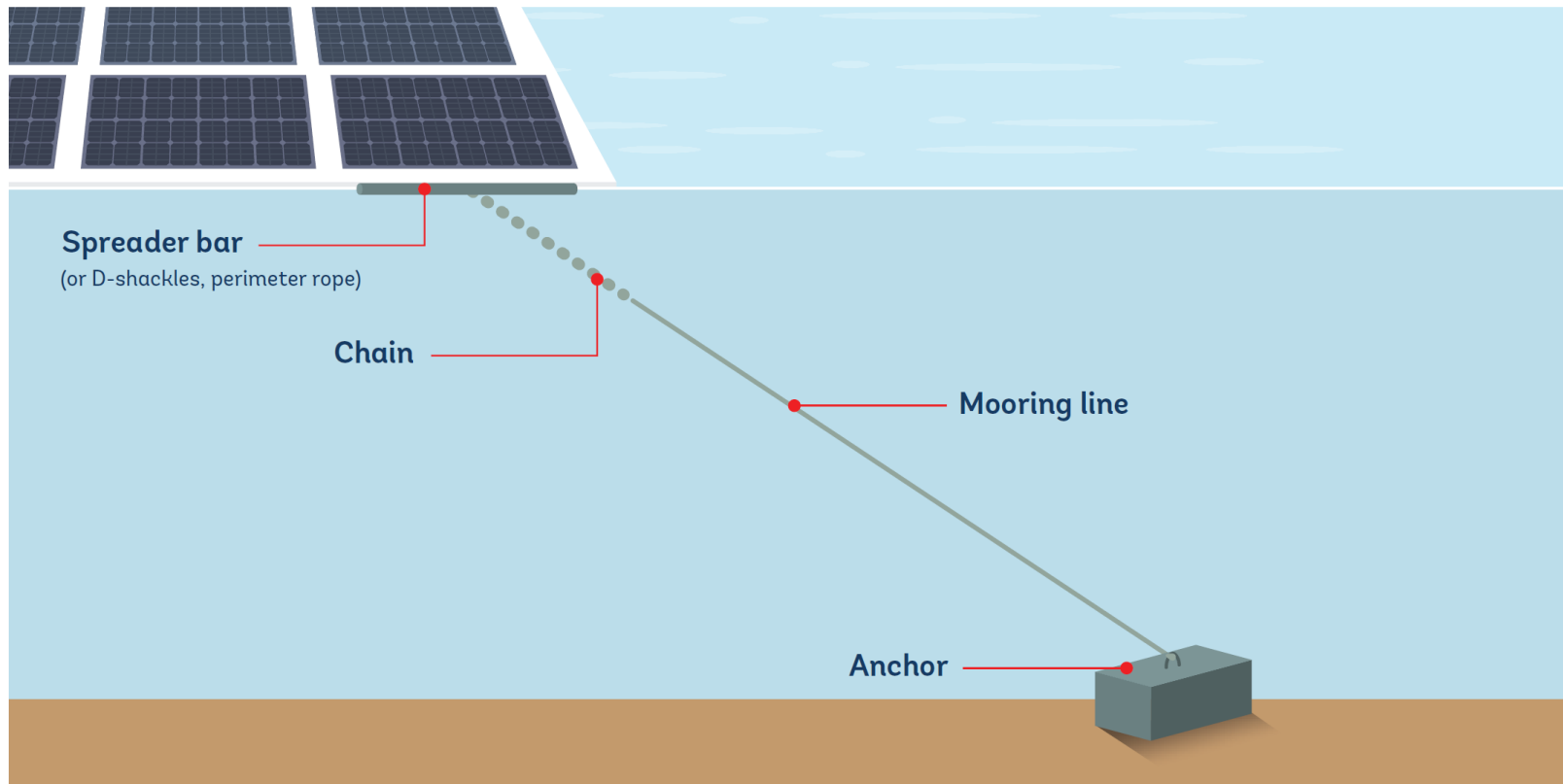
Wind protection solutions



Floating photovoltaics

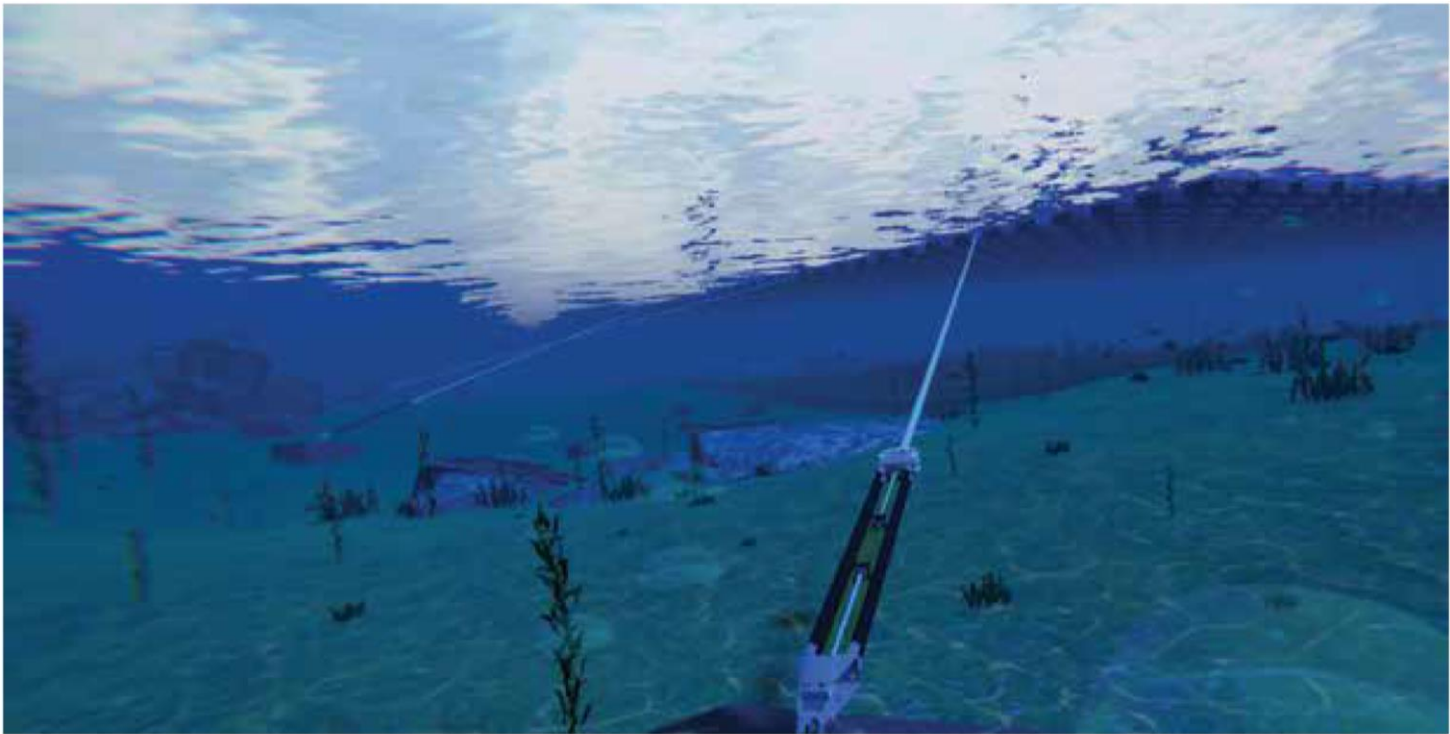


Floating photovoltaics



Source: Adapted from Ciel & Terre International.

Floating photovoltaics



Source: © Seaflex.

Floating photovoltaics



Floating photovoltaics



速報 /

強風の影響かメ

Floating photovoltaics

In summary

- Floating PV is an emerging market with **high growth potential**
- Increased system costs may be justified by **higher generation** and **land savings**
- Very convenient synergy with **hydropower** generation
- **Environmental impacts** are site specific
- **Lifetime** to be tested