

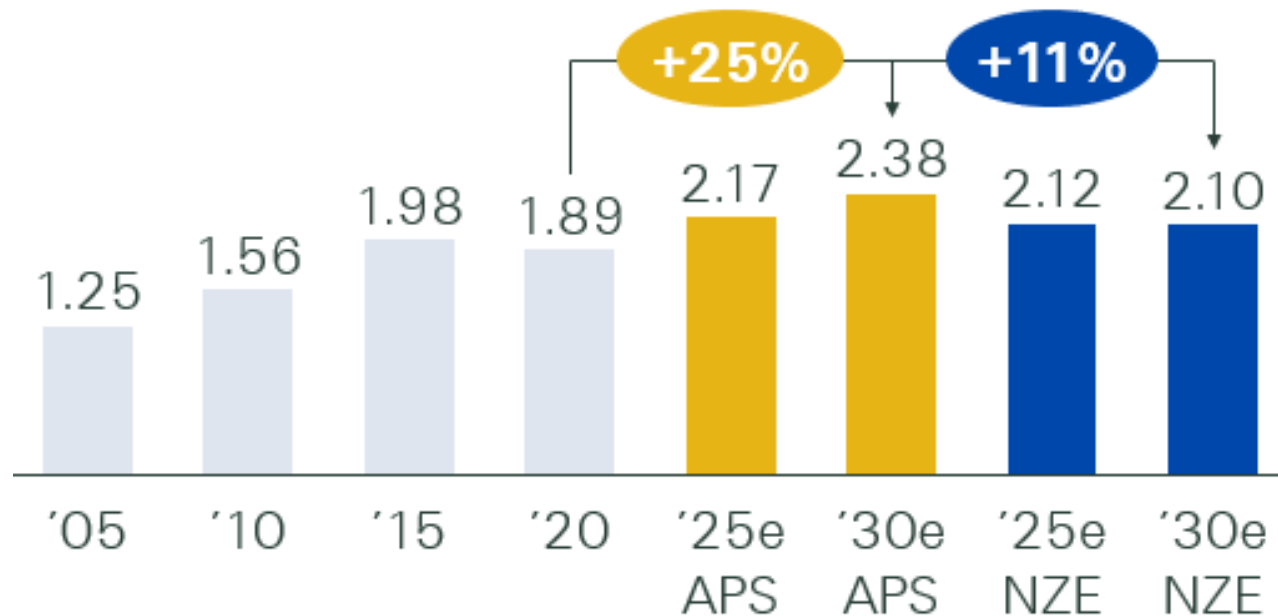
# Sustainable construction and emerging opportunities

Jimmy Keime, Head Engineering EMEA & Chief UW, Swiss Re, July 2023



# Growing demand for building construction materials by 2030

**Global cement demand** (Gt) in building construction



Demand as per announced pledges (APS):

**+25%**

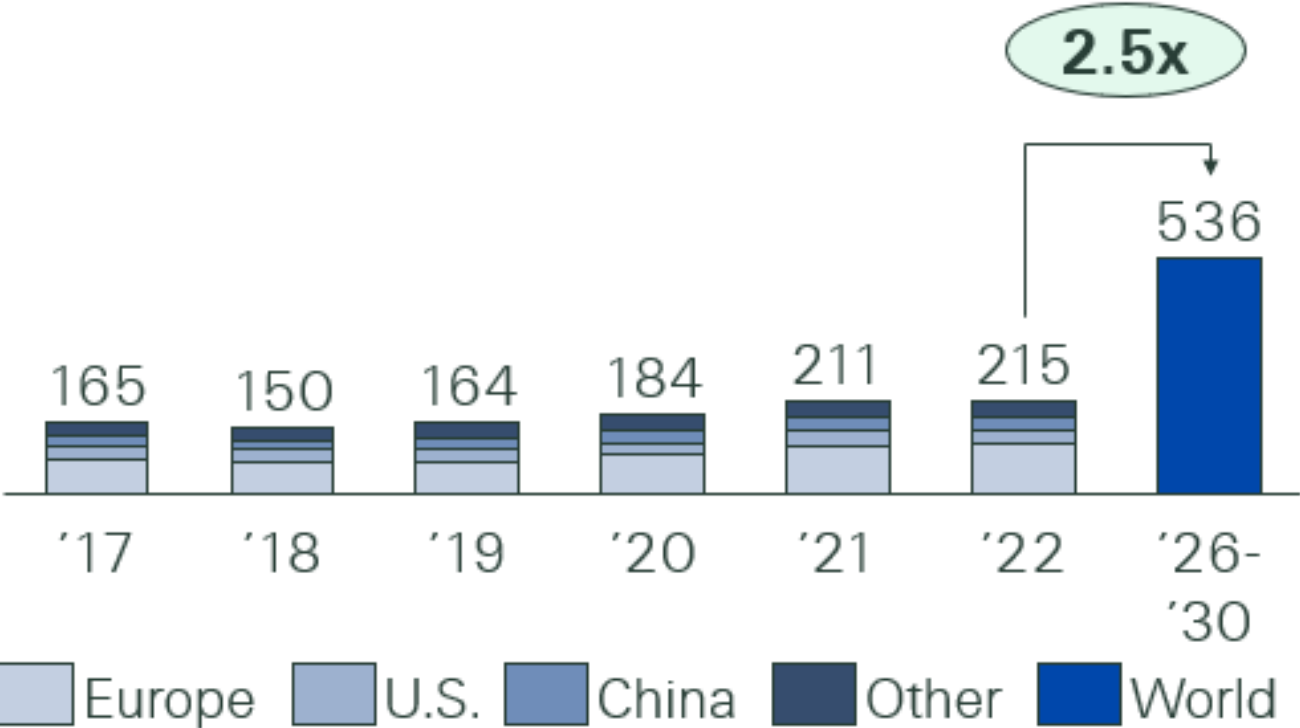
Demand as per Net zero (NZE):

**+11%**

Source: [IEA](#), 2022.

# Decarbonization will also require retrofitting existing buildings

**Annual investment in energy efficiency in buildings,**  
NZE scenario, 2017-2030, USD bn

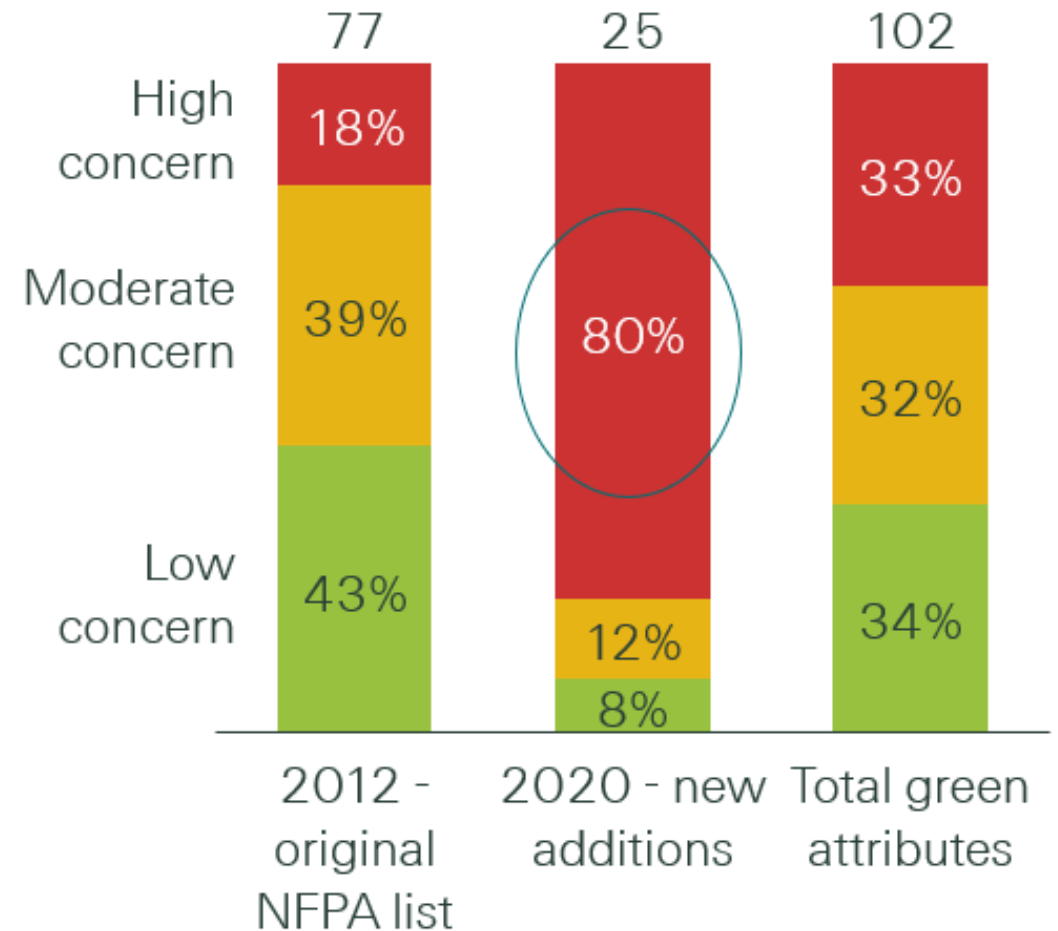


**2.5x**  
annual investment  
in future

# Green attributes may change risk profiles

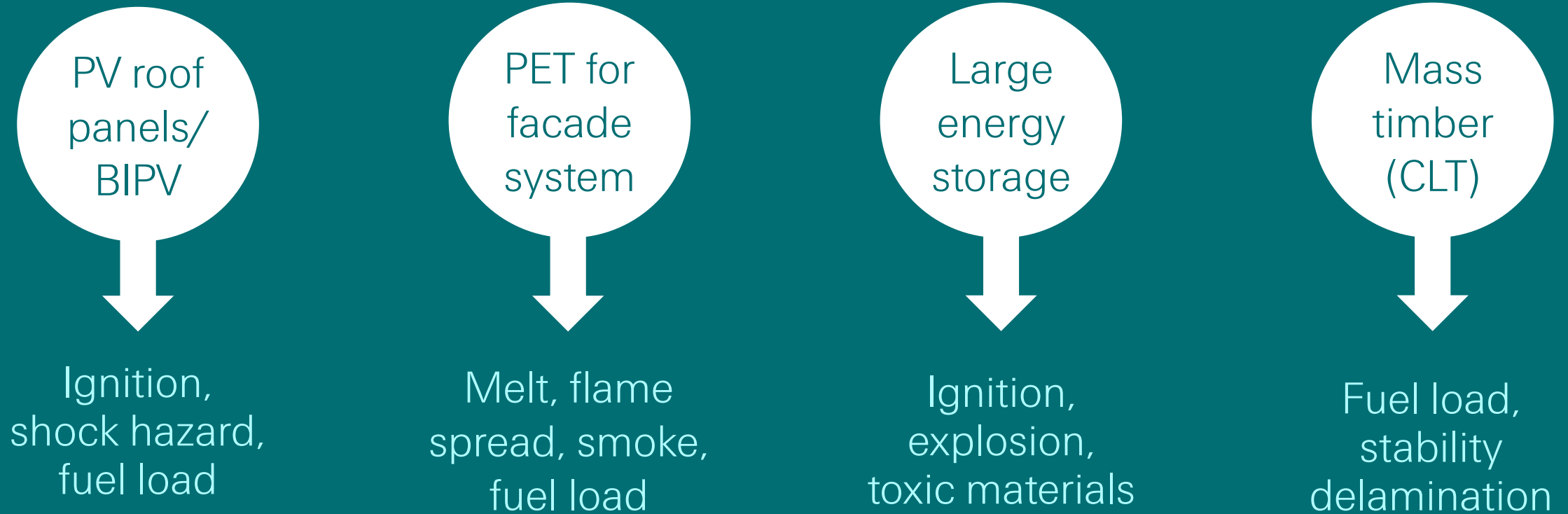
- 80% of green building attributes added in NFPA's 2020 report tagged 'high concern' for fire unless mitigated
- Knowledge gaps on fire being closed
- Knowledge gaps on structural risks remain
- Lower susceptibility to fire does not equate to lower structural risks

## Number of green attributes, by fire risk



Source: Swiss Re Institute analysis from NFPA Green Building Report

# Unintended hazards from retrofitting and new materials



# Mass timber has benefits but risks too

## Benefits

- Low embodied carbon
- Quicker construction
- Fewer workers needed
- Lighter than concrete or steel
- Better seismic performance

## Risks

- Water damage
- Fire safety challenges
- Regulatory challenges
- Inexperienced contractors
- Supply chain challenges



# Due to unique risk profiles, insurers can consider how new construction impacts policies

1

Incorporation of condition for pre-agreed remedial works protocol

2

Requirements on storage of components awaiting installation

3

Aggregation clauses for repetitive nature of losses

4

Clarity on how CAR, transit, & manufacturing policies begin and cease

# Sustainable construction brings opportunities

## **Opportunities for risk transfer**

- Extended warranties
- Construction delays
- Solar energy shortfall
- Building energy savings
- Serial losses
- Resilience services

## **Conditions for insurability**

- Responsible value chain
- Governance and ownership practices
- Risk consulting and engineering
- Analyses of aggregations
- Deductible and rate adequacy
- Entrepreneurial risk: Suppliers and manufacturers guarantees/warranties

# Insuring what has not been insured before

Insurance covers traditional construction products or processes complying with

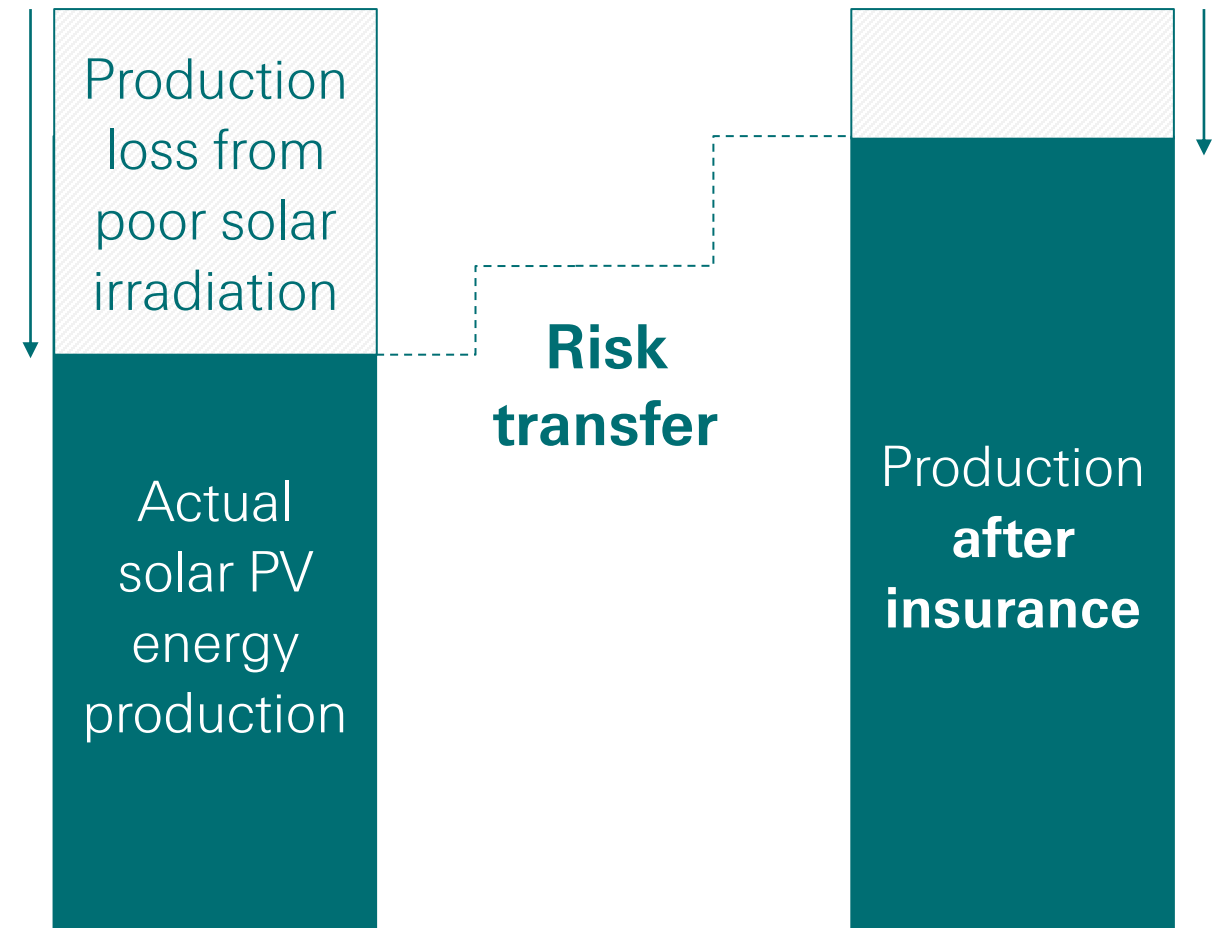
- i. Approved standards (NF DTU or NF EN),
- ii. Professional rules (accepted by the C2P) or professional recommendations

Non standardized new tech require prior declaration

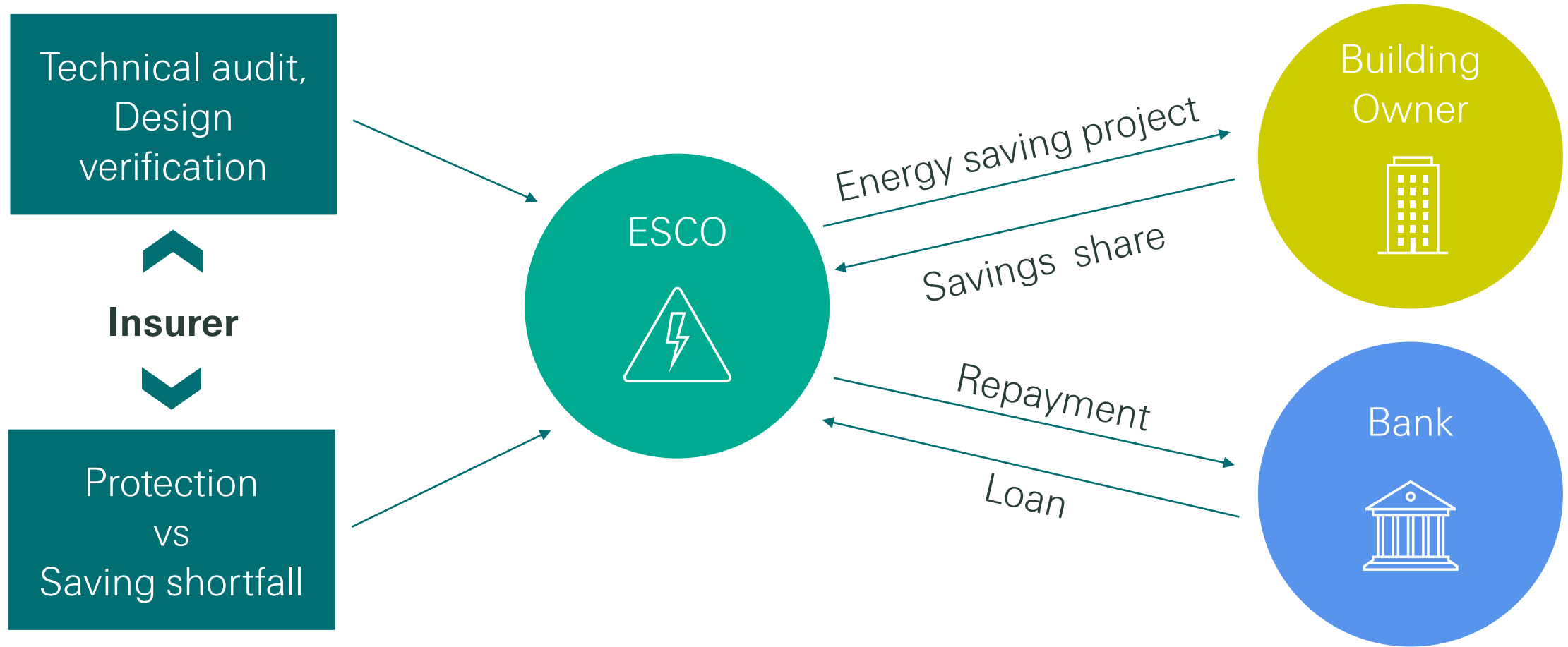
- Premium may be adjusted to reflect risk
- Involve specialized engineering firms and qualified contractors
- Technical assessments (ATec, ATEx, ETN, etc.)
- Ensure appropriate risk management

# Insurance protects solar operators against revenue shortfalls

- Coverage based on predicted solar panel energy production
- Standards based on input (solar irradiation) and output (energy generated)
- Exclusions: shortfall due to maintenance, equipment breakdown etc.

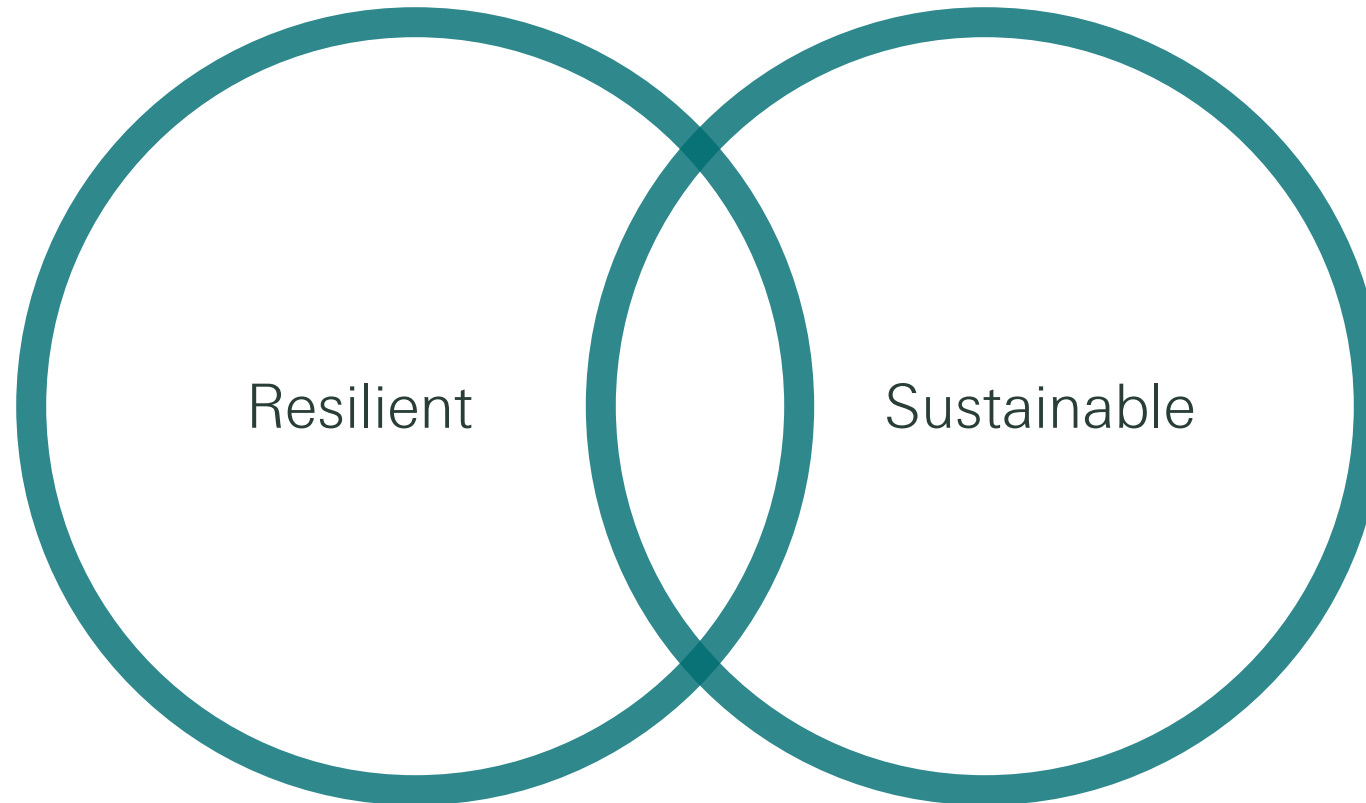


# Verify designs and protect income for energy saving projects



# We can achieve both insurability and sustainability

- Climate resilience
- Reduced hazard
- Increased robustness
- Better adaptability



- Reduced energy, material use
- Green energy, recycled materials
- Air quality, save energy & water

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