NELL – Novel Encapsulant for long Lifetime High Voltage resistant PV Modules

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Project data

- consortium: 2 partners and
  2 sub-contractors from
  Spain and Germany
- duration: 1/2018 to 12/2019
- total cost 534 T€, funding 419 T€

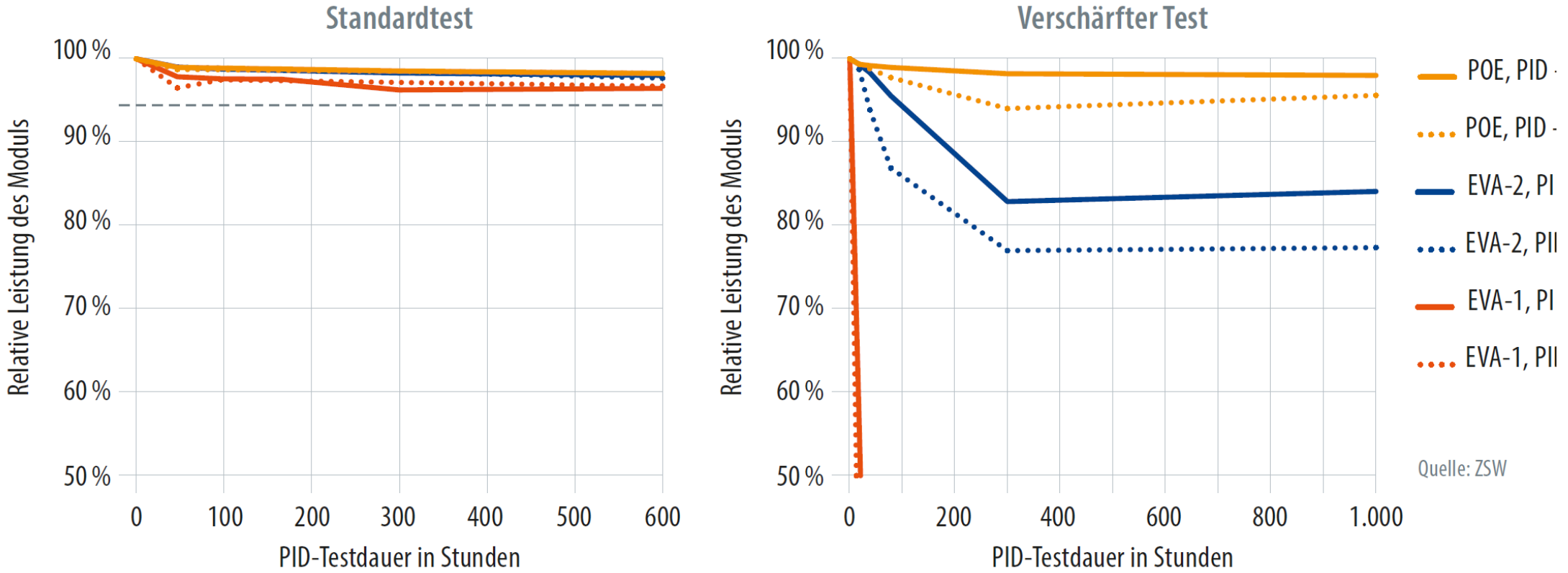
after merging

Scientific, technical, commercial challenge(s) addressed

- Reduction of turn-key system cost by 20% enabling a real transition to 1500 V without increasing module components cost
- Development of a highly PID-resistant encapsulant
- Avoidance of PID even under harsh humidity and temperature conditions
- 30 years module lifetime
- life-cycle environmental impact, recycability of encapsulant

Key outcomes, results and benefits

- Extremely accelerating PID test developed that unveils different PID sensitivity



Key outcomes, results and benefits

- New material provides highest PID resistivity
- 30 years PV module lifetime solved for the encapsulant

Noteworthy dissemination and exploitation

- know-how of the developed PID test is spread in conferences and influences future PID standards and lifetime testing procedures
- PV modules with long lifetime essential ideal for BIPV due to difficult access

Critical factors:

- unfortunately STR stopped production of module encapsulants
- encapsulant is more expensive than the common EVA

Experiences gained in transnational set-up

- The small consortium was very effective and more flexible to cope with unforeseen events in contrast to big EU consortia
- Restriction of the number of topics in the project was very effective

Critical factors and lessons learned for future successful transnational R&I projects

Differing project starts for the partners due to national administration

- Germany: 1.1.2018 as foreseen
- Spain delayed project start : formal approval end of June 2018
  for start in the past on 1.3.2018

Potential follow-up

Follow-up

- further ERA-NET solar project national project with new partners ongoing targeted aim: >40 years lifetime for encapsulant

Potential follow-up

- further increase of module lifetime and synchronizing with building cycles
- investigation of all other module components regarding enhanced lifetime