



UiO : University of Oslo

Solar Energy Research in Norway

(two FMEs +)

Morten Dæhlen, University of Oslo

An increasing solar energy research effort



SOLARIS

Internally funded



National centre



National centre



Many smaller projects, mixed funding

2008

2010

2012

2014

2016

2018

2020

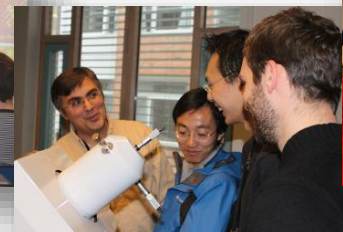
2022

2024

The Norwegian Research Centre for Solar Cell Technology

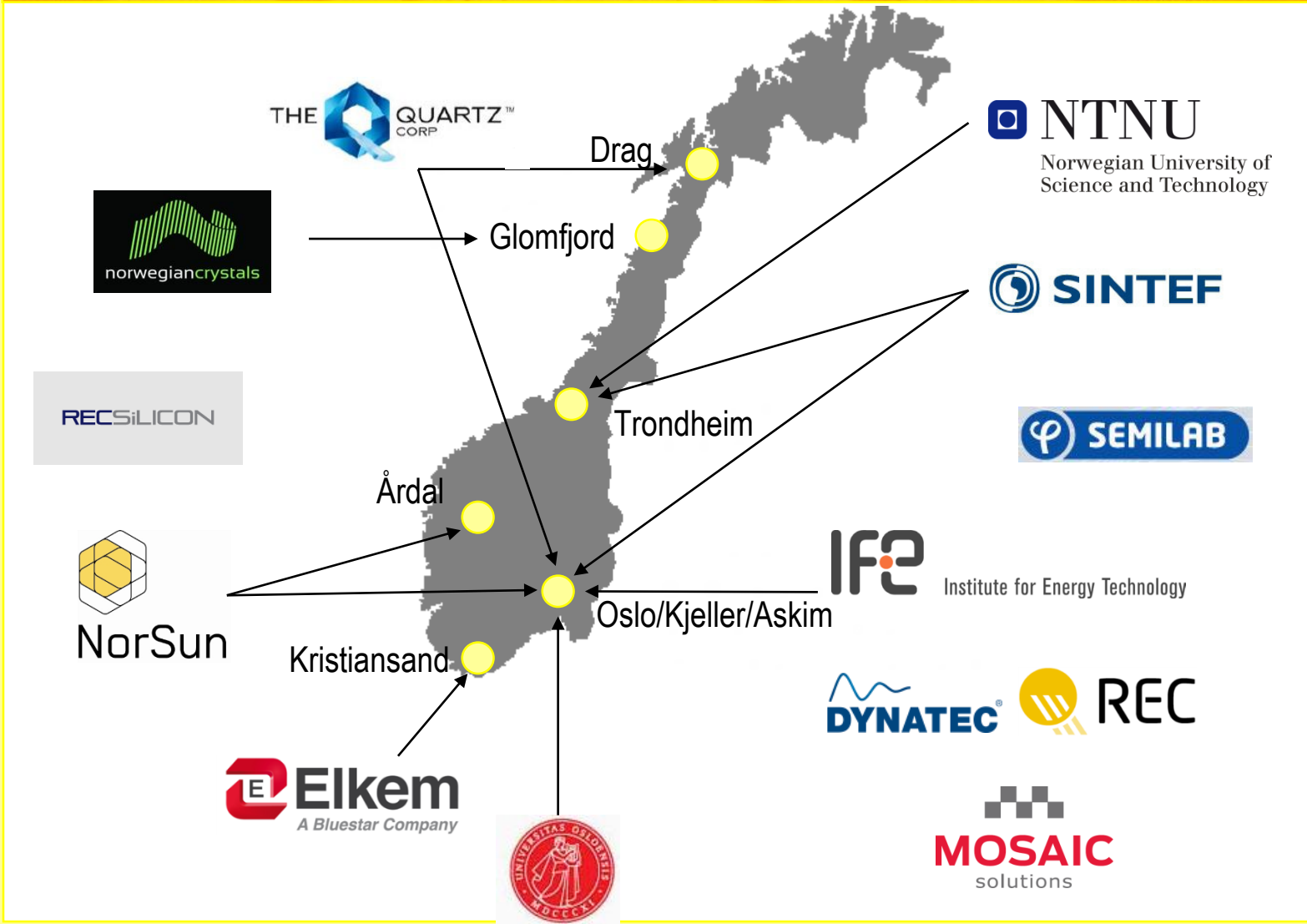


- **Nationally coordinated centre**
 - The Institute for Energy Technology (IFE) is project manager
 - Running 2009 - 2017
 - 4 major research partners – two universities and two research institutes
 - Currently 9 industry partners
- **A few highlights**
 - World class competence on crystalline silicon solar cells
 - Good success with spin-off projects (innovation, infrastructure, EU)
 - Research school has gathered PhDs and postdocs from all over Norway



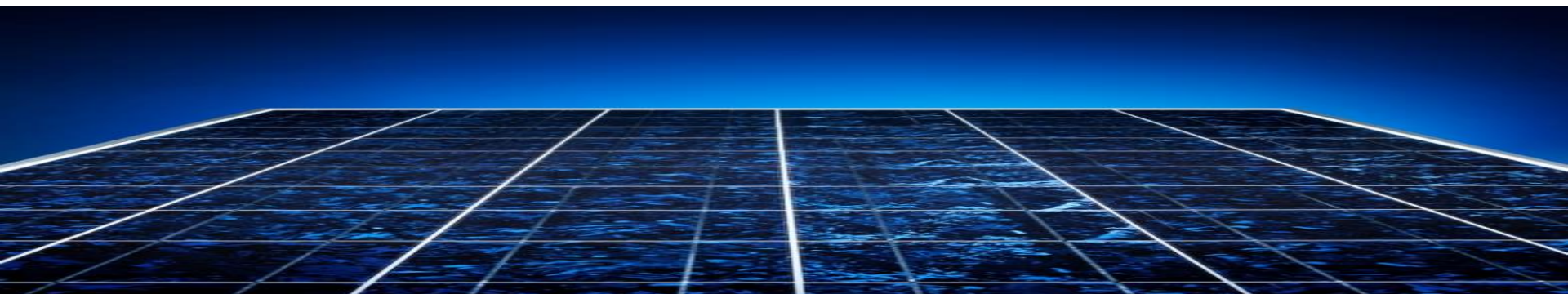


The Norwegian Research Centre for Solar Cell Technology



Research Centre for Sustainable Solar Cell Technology (2017 – 2024)

- **A new, nationally coordinated centre**
 - Also managed by the Institute for Energy Technology (IFE)
 - 6 research partners – four universities and two research institutes
 - Currently 15 industry partners/userpartners
- **Project goals**
 - Strengthen and develop Norwegian industry
 - World's most environment-friendly solar grade silicon (including the lowest CO₂ emissions)
 - New materials and concepts compatible with silicon solar cells
 - Help boost the use of solar cells locally



Research Center for Sustainable Solar Cell Technology («FME II»)



CODE

RECSILICON



NorSun



Statoil



NORGES BONDELAG



Research Center for Sustainable Solar Cell Technology («FME II»)

FEEDSTOCK PRODUCTION

RECSILICON



SUBSTRATE PRODUCTION/ CRYSTALLIZATION + WAFERING



NorSun



SOLAR CELL PRODUCTION



SOLAR MODULE PRODUCTION



SOLAR ENERGY SYSTEM



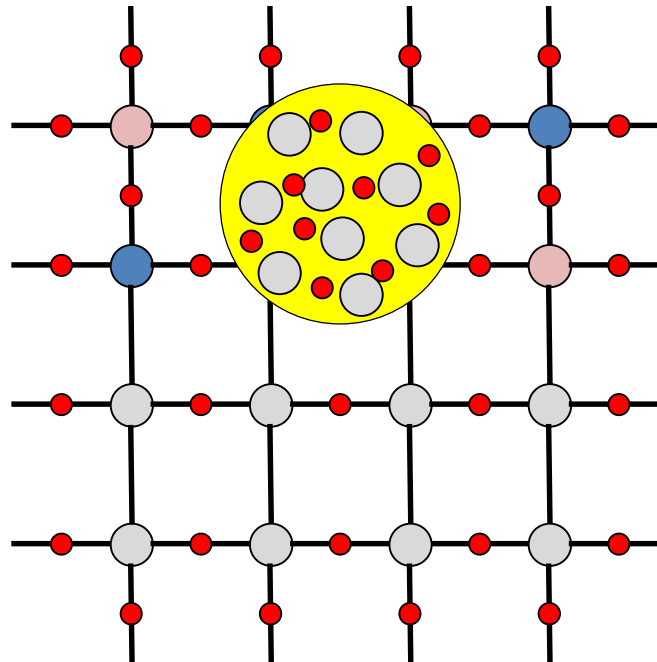
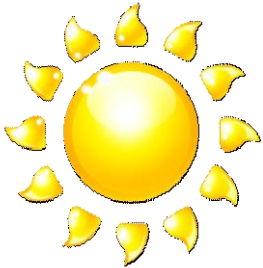
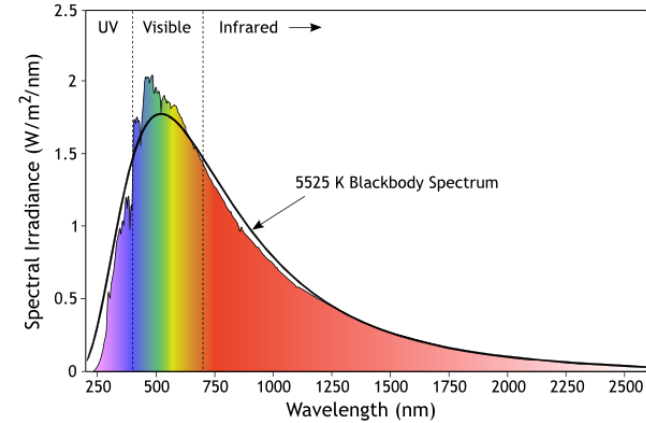
NORGES BONDELAG



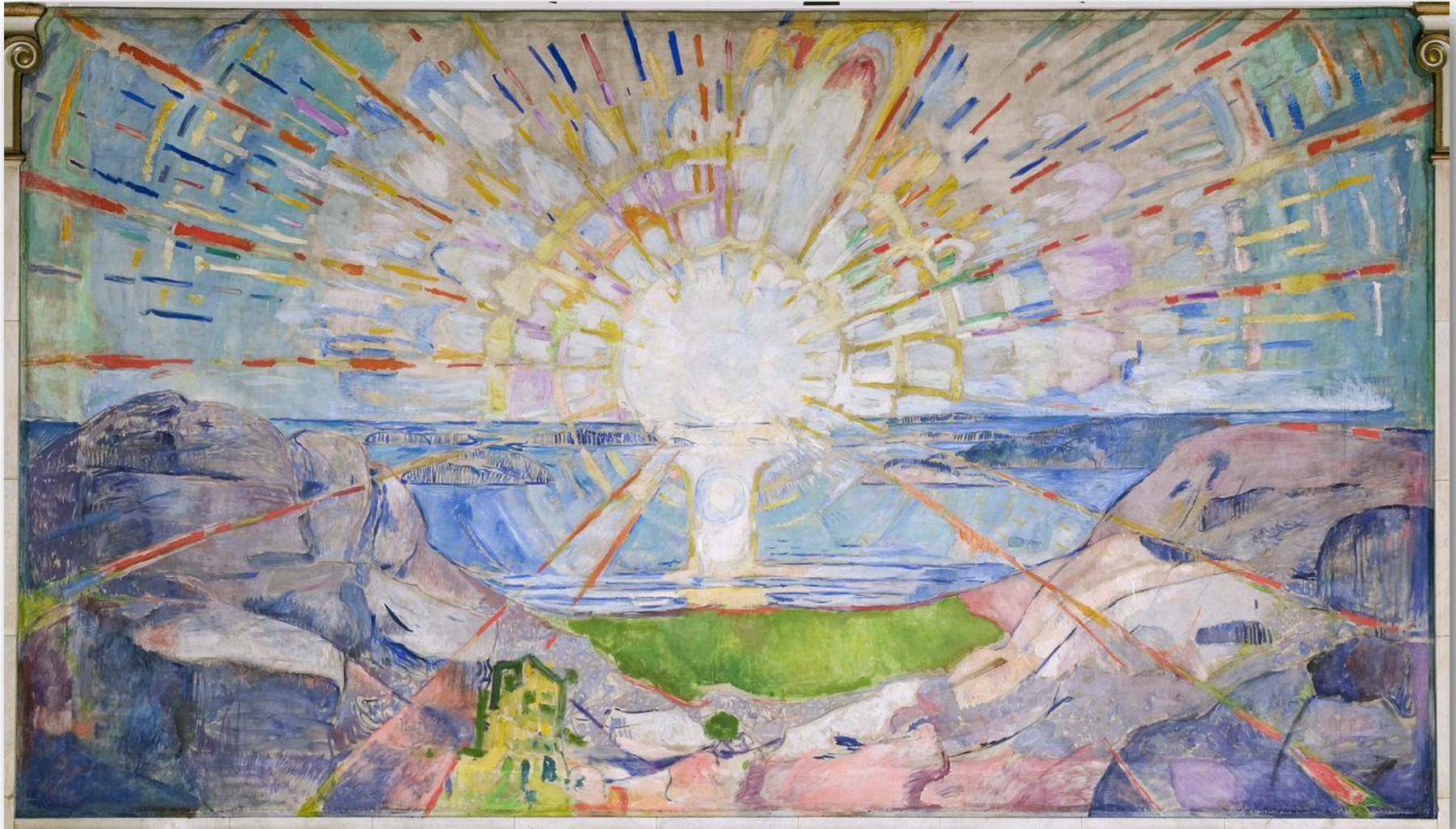
One research example

Making the solar cells of the future

- Photovoltaics combined with new nanotechnology
- Solar cells with an efficiency of 50-60% are realistic!



- Zinc
- Oxygen
- Silicon
- Electron



Edvard Munch – *The Sun* (1916)