TOWARDS A CIRCULAR ECONOMY

- Skills and competences for STEM professionals

Inese Podgaiska
Secretary General

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ASSOCIATION OF
NORDIC ENGINEERS

Established in May 2007

Regional cooperation for trade unions representing engineering and STEM professionals

Member organisations: **IDA**, **NITO, Sveriges Ingenjörer**, **VFÍ and Engineers Finland**

Represents interests of more than 500.000 engineers in the Nordic region

Secretariat based in Copenhagen at IDA headquarters

Core activities
- Knowledge sharing & co-creation
- Policy influencing
- Cooperation&networking

Context

Political framework

- Politicians talk in slogans
- Planetary boundaries are already outside the safe operating space
- National strategies lack reference to competencies

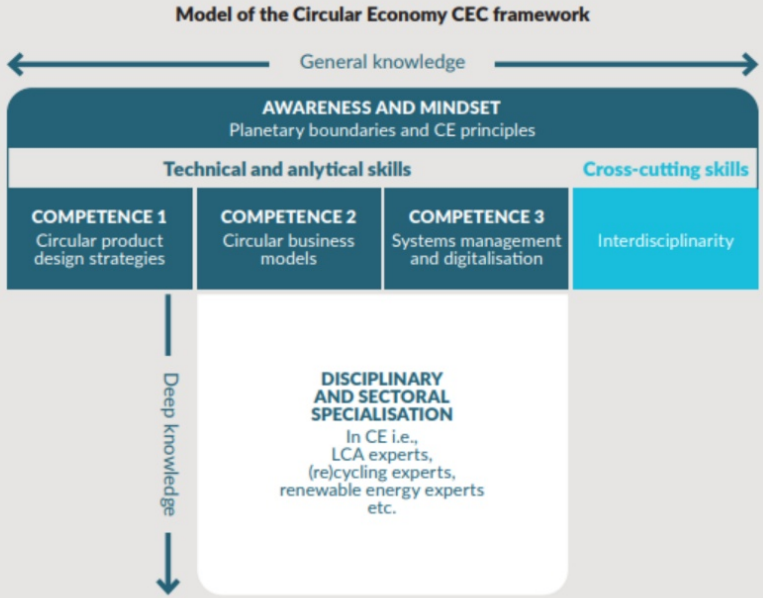
Why do we care?

- Don't Look Up, but the clock is ticking
- Big expectations on STEM professionals
- Responsible development of AI & new technology
- Provision of STEM specific courses (Lifelong learning framework)
- Soft skills/versus IT skills
- Shifting mindset & upskilling the education systems

The T model framework

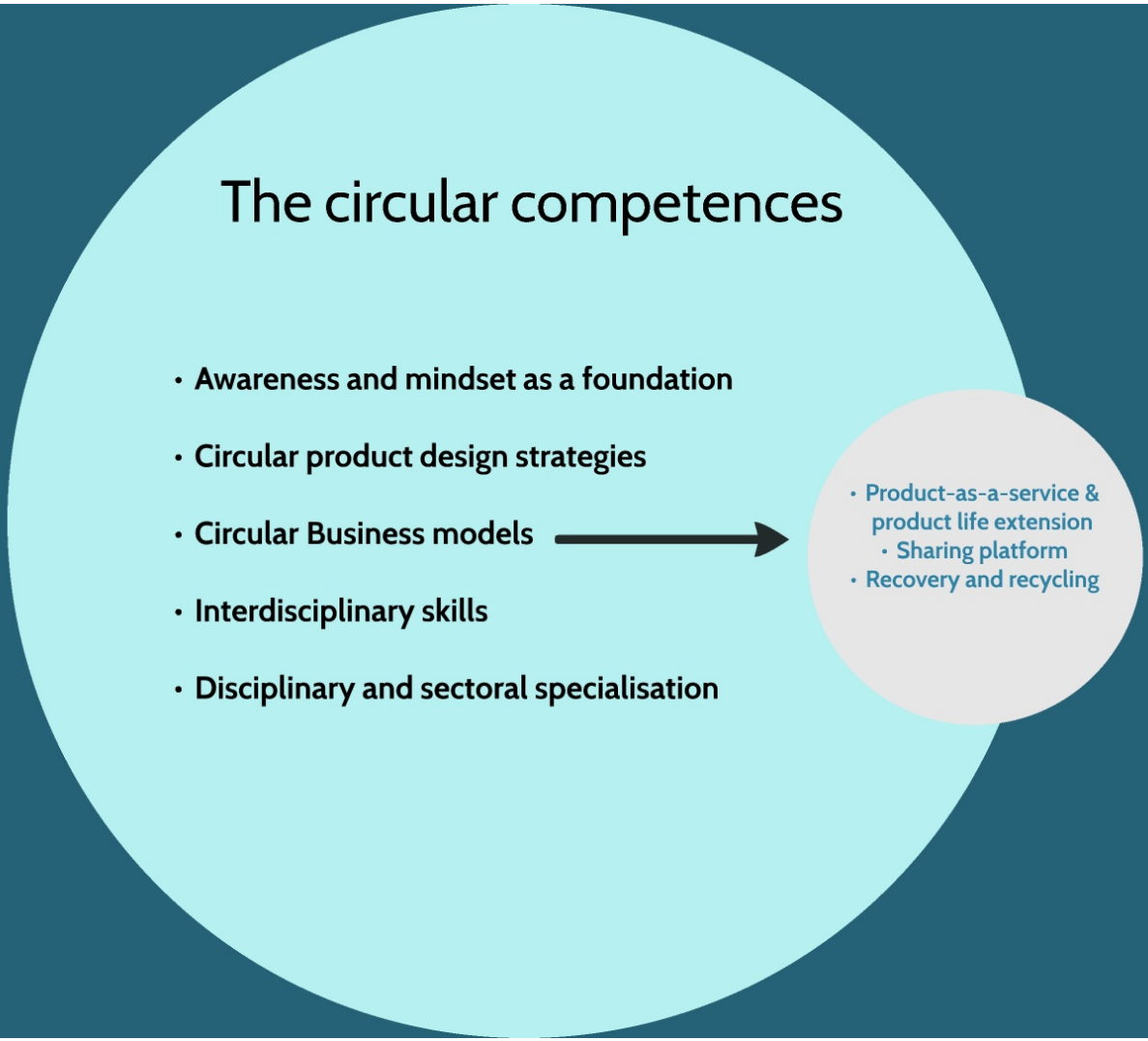
The STEM professionals and engineers have a strong T-shape knowledge profile. That is deep expertise in a single field combined with general knowledge and abilities across disciplines. Sustainability and circular economy should be incorporated more strongly in the horizontal line together with basic competence related to digitalisation
and other future cross-cutting skills.

Leena Pöntynen
Director, Skills and Competence, Technology Industries of Finland



The world is finite and has a finite carrying capacity. It is crucial to understand how natural systems work and what the planetary boundaries are. I don't think we emphasise these yet enough in any level of education.

Elin Larsson, Program manager, RISE



"Digitalisation enables companies to move up in the value chain by producing more sophisticated services"

Riikka Heikinheimo
Director,
Confederation of
Finnish Industrie

The Role of digitalisation in a Circular Economy

- **Product and service life cycle management**
- **Supply chain optimisation**
- **Analysing and optimising efficiency in the product and the systems level**

Concrete examples

Students sustainability contest

Network of young engineers working with sustainability

TEK toolbox to support departments

IDA Strategy on circular economy - recommendations for the government

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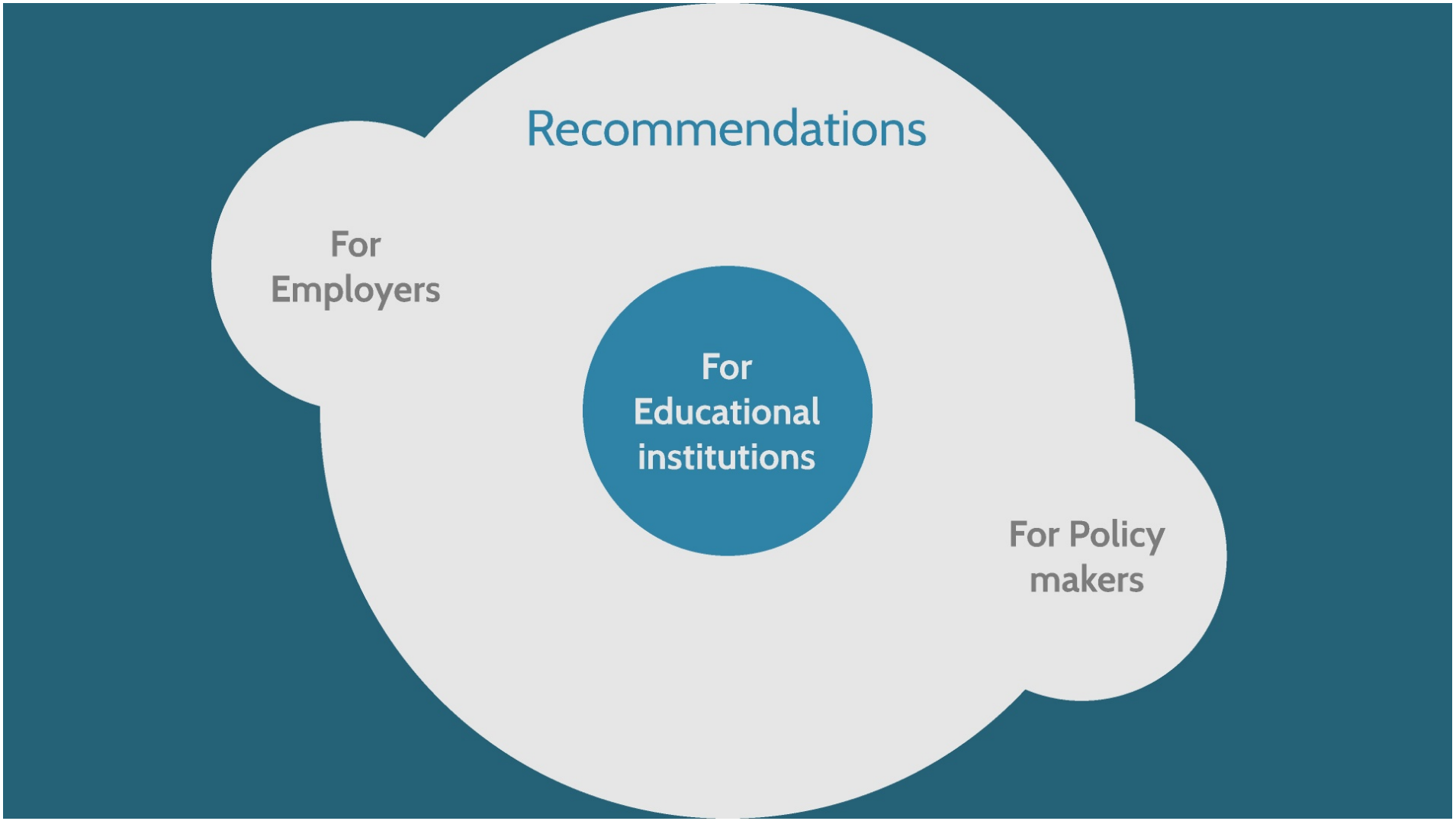
NITO
STINA VALHEIM (26)
We also have a lot of other ideas for solutions
that we will implement for creating even more value.


Recommendations
For Employers
For Educational institutions
For Policy makers

For Policy makers

- Include a strong focus on skills and competences in national Circular Economy policies
- Conduct more research on the demand for skills for a green transition
- Provide funding for higher education institutions to enable the transition to a circular mindset.
- Broaden current strategies at the Nordic level

For Educational institution

- Establish a universal Circular Economy Competency framework for all engineers & STEM professionals.
- Integrate the Circular Economy Competency framework in all degree programmes and as learning goals of courses
- Educate the educators

For Employers

- Create spaces for upskilling
- Create agile ways to train graduate engineers and STEM professionals
- Promote STEM professionals as leaders in the Circular Economy.

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