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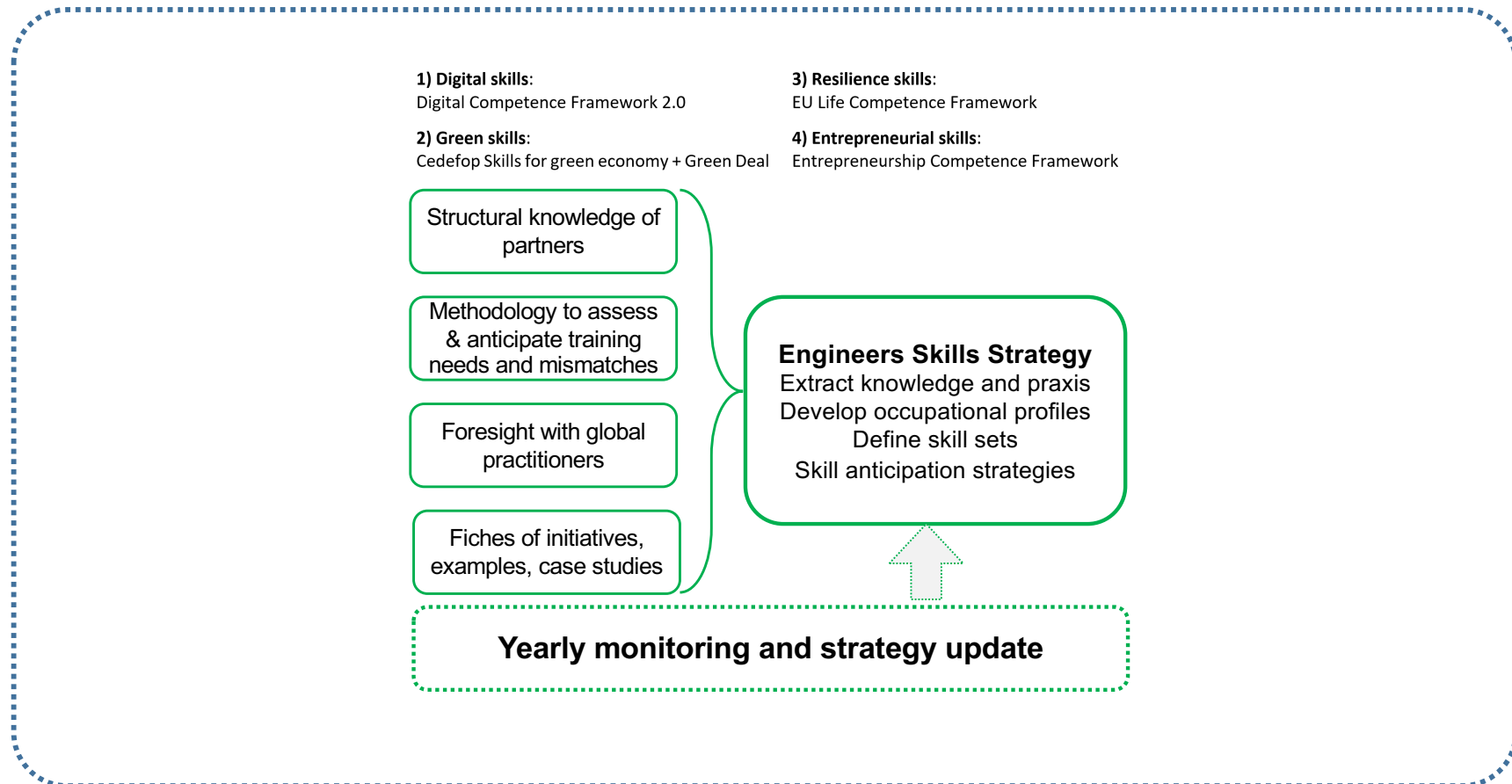
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Results of Primary and Secondary Research:
Input to the E4E Strategy

SITUATING Work Package 2

WP 2 : E4E Skills Council = Skills Anticipation and Monitoring

1) Digital skills:
Digital Competence Framework 2.0

3) Resilience skills:
EU Life Competence Framework

2) Green skills:
Cedefop Skills for green economy + Green Deal

4) Entrepreneurial skills:
Entrepreneurship Competence Framework

Structural knowledge of partners

Methodology to assess & anticipate training needs and mismatches

Foresight with global practitioners

Fiches of initiatives, examples, case studies

Engineers Skills Strategy
Extract knowledge and praxis
Develop occupational profiles
Define skill sets
Skill anticipation strategies

Yearly monitoring and strategy update

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RESEARCH RESULTS

Results of Primary and Secondary Research :
Inputs to the E4E Skills Strategy

- Goal WP2: Create a sustainable & effective framework for E4E that enhances the competitiveness of the engineering profession in Europe : Research Paper = 316 pages.

- Common methodology : assess current situation, anticipate future needs, monitor progress.

- Combining primary (surveys) & secondary research (literature, reports, statistics, etc.).

- Topics covered: identify challenges for the profession + education providers.

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CONCLUSIONS and RECOMMENDATIONS

1**.** **Strong positioning statement** about the profession (to improve the image) is required in public communication: making clear why engineering matters.

2. Engineers are best served with **Competency-based Learning** and by an **Assessment of their Learning Outcomes** (knowledge, skills and wider competences or attitudes).

3. Increased emphasis on **Sustainability and Environmental concerns** + greater use of **Automation and AI** will be the most important changes over the next five years. **Renewable Energy and Green Infrastructure** are seen as major areas for innovation and development. Engineers will require a better understanding of **Sustainable Design and Circular Economy.**

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CONCLUSIONS and RECOMMENDATIONS

4**.**   **Incorporation of sustainability principles** in formal engineering   education   is paramount to better prepare engineers for the 21st   century.   Changes   in   education curricula and CPD to bring SDGs into   everyday practice + more practical experience (intern- & apprenticeships).

5.   Formal/informal curriculum needs to be developed to better align with the **needs of the job market** = task for universities, technical schools and   industry; businesses have a role to play in programs of re- & upskilling.

6.   Most significant **soft skills** are identified as: critical thinking, collaboration   and communication skills.

7.   Focus on promotion of **"diversity and inclusion policies"** and   encouragement   of **experimental and problem-based learning**   opportunities to develop ethical decision-making skills.

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CONCLUSIONS and RECOMMENDATIONS

8.   **Mentorship and diversity/inclusion training** need to attract more   talent from diverse/under-represented groups.

9.   Engineers have a major role in **promoting sustainable practices.**

10.   **Newly created jobs** will arise in completely new occupations or   existing occupations will undergo significant transformations in content.

11.   Engineering disciplines with future shortage are identified in **electrical/electronic-, ICT and agronomic engineering.**

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CONCLUSIONS and RECOMMENDATIONS

12.	Skills gaps in the local labor markets are seen as a bigger **barrier to business transformation**, than a shortage of investment capital.

13.	**Partnerships** between industry and educational institutions together with investments & **increased funding in R&D** in emerging technologies, are seen as effective tools to address digital, green, resilience and entrepreneurial skill shortages.

14**.**	**Entrepreneurship** is a key competence in improving European competitiveness + focus of R&D on development of a social and green economy. Professional Engineering Organizations can encourage this mindset and promote entrepreneurship through **interdisciplinary collaboration.**

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