

RENEWABLE ENERGY SYSTEMS INTEGRATOR

THEORETICAL PART



Context:

You are in a rapidly expanding urban City on the Mediterranean coast. Known for its ambitious eco-friendly initiatives, it boasts a mix of modern skyscrapers, historic neighborhoods, and sprawling green spaces. However, the city's energy infrastructure is under increasing pressure due to population growth, frequent heatwaves, and an ambitious goal to achieve 80% renewable energy integration by 2030. Recently, a major blackout disrupted services for 48 hours, sparking public outrage and concerns about energy security. In response, the mayor's office has launched the "Green Grid 2030" initiative, aiming to redesign the city's energy infrastructure with cutting-edge hybrid systems combining solar, wind, hydro, and energy storage technologies. As part of the "Green Grid Task Force," you, the Renewable Energy Systems Integrator, have been called in to lead the redesign. Your task is to propose a hybrid energy system that meets the city's growing energy needs, ensures grid reliability, and maximizes renewable energy integration. Every stakeholder is looking to you to design a solution that addresses their needs while optimizing the city's renewable energy potential. Will you manage to balance innovation, cost, and sustainability? The clock is ticking, and the eyes of the city are on you!



GUIDANCE PART

Related Contents/Skills

Adaptability

Systems Design

Software Proficiency

Collaboration

Problem-solving

Data Analysis

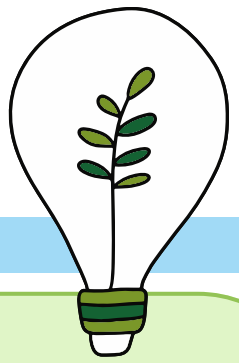
Project Management

Self-Reflection Questions:

- What technical solutions could enhance the efficiency and reliability of the hybrid energy system?
- What key challenges did you identify in integrating renewable energy systems with the existing grid?
- How well did your solutions address the long-term sustainability goals of the City?
- How can you foster collaboration between governmental bodies, private companies, and citizens to ensure the success of the "Green Grid 2030" initiative?
- How could your solution adapt to future growth and evolving energy demands in the City?
- How does your role as a Renewable Energy Systems Integrator contribute to the global shift toward sustainable energy practices?

PRACTICAL PART

[This section will be answered by the students]



Analysis:

- What is the main problem or need to be addressed?
- What knowledge and skills are necessary to tackle this situation?
- What are the strengths and weaknesses of the context in which this problem arises?

Planning:

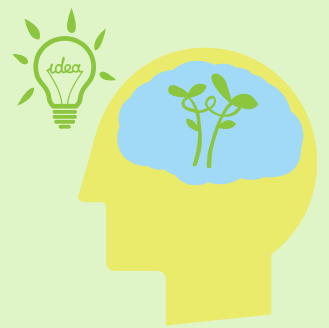
- How can an initial plan be developed to address the identified needs?
- What material and human resources are available to address the situation?
- What specific actions should be taken to implement the solution?

Suggestions and Prevention:

- What suggestions can be offered to execute the proposed solutions?
- How can risks or potential future problems related to the solution be prevented?

Evaluation:

- What methods can be used to assess the success and sustainability of the implemented solutions?
- How will the evaluation be conducted, what instruments will be used, and what variables will be analysed?



Expected Results after Implementation

What are the expected outcomes after implementing the solutions?
How is the future context expected to look after our intervention?
What suggestions can be made for future applications, maintenance, or performance improvements?

Reflection on Developed Competencies and Project Impact:

What competencies were developed and what is the potential impact of the project?
What difficulties or strengths were identified during the implementation of this EcoJob in a real context?
How is the coherence of the EcoJob analysed, and how suitable is it in relation to the identified need?

