Project Order			
Project Name:	Optimus Shakti 5.0	Project Number:	1.1
Sub-Project	Controller Design	Project Manager	Mostafa Elbanna
Customer:	David Schlipf	Deputy / SI:	Jannik Stegert
Date:	26.10.2024	Team leader:	Julius Preuschoff

Problem Description (Reason for the Project, Strategic Purposes):

The sub-project target is to develop a control system for a wind turbine in the range of up to 5 MW rated power for the Indian market. The Indian market requires a turbine for relatively low wind speed conditions while using a relatively high rotor area to harvest more energy from the wind. In addition, the Wind Turbine will be coupled with an energy storage unit. The to-be-designed controller of the future WT needs to be developed in accordance with these pre-set conditions to assure optimal control of the WT, which serves the highest yield of energy with the lowest loads on the turbine itself.

Project Objectives:

Design and implementation of the controller for the developed onhore wind turbine integrating the storage control unit's controller (will not design the storage controller)
Provide an interface to be able to connect the wind turbine controller to the energy storage unit
Coordinate with the energy storage development team the development of the interface connection
Interface work between energy storage dev. Team and load & simulation team
Improving base controller model in regards to the special requirements of the project

Organisation (Committees, People, Responsabilities):

Steering Committee:	David Schlipf, Mostafa Elbanna, Jannik Stegert
Project Team:	3rd semester 'Master Wind engineering' 2024/2025
Team leaders:	Julius Preuschoff
Sub-Project Team:	Julius Preuschoff, Felix Lehmann, Karan Soni

Dates, Milestones

Start of Project:	24.9.2024
Overview and research	15.10.2024
Supplying storage group with simple WT model	29.10.2024
Improvement of base controller	11.11.2024
Simulation and testing	20.12.2024
End of Project	10.1.2024
Final report	23.12.2024
Final presentation / end of project:	28.1.2024

Restrictions:

No strategy for the energy storage system is chosen yet -> ontroller design effort therefore is not fully predictable

Risk Management (Which risks may occur, how to manage it?)

Risk: Lack of knowledge	Measure: Research on topic
Risk: Unmotivated team member	Measure: Encourage the team
Risk: Lack of research and documentation	Measure: Ask supervisors for references

Reporting:

Weekly presentation
Weekly meeting with tutor
Weekly meeting with group members
Final report
Final presentation

Team leader:	Head of Project:
Date: 28.10.2024	Date: 05.11.2024
Signature: J. Preuschoff	Signature: