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Erasmus Centre for Energy Transition

Transforming Energy Together

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Stuck in Gridlock:
Grid Congestion, Flexibility, and the Energy Transition

Executive Summary

Erasmus Energy Transition Case Series

In early 2024, Sam Towns, the program coordinator of charging infrastructure at the Rotterdam Municipality was hit with shocking news: the regional grid operator announced it wanted to turn off all public electric vehicle (EV) charging stations during peak hours in the afternoon and evening, due to lack of capacity in the electricity grid. Sam knew that the grid could not handle much more load, but this decision would make collaborations on improving grid management even harder. She called an emergency meeting with key stakeholders and decision makers related to EV charging and its impact on the grid. This role-play case addresses key issues and challenges in the energy transition, with a focus on EVs and power grid management. Each of the six roles is a key stakeholder and decision maker that contributes to and/or can improve grid management. Over the course of the negotiations, stakeholders try to find common ground on four key decision variables: charging stations, grid upgrades, flexibility options, and grid operator direct control.

This role-play explores issues related to the energy transition and power grid management. After participating in the role-play, students will be able to:

- Analyse the complexities in the energy transition and grid management through the competing interests of multiple stakeholders.
- Critically assess and diplomatically articulate the trade-offs involved in decision making in sustainability challenges, when stakeholder interests are both competing and interconnected.
- Develop strategic planning and problem-solving skills by creating a solution that considers technical, economic, and social issues; balances short- and long-term thinking; and is influenced by negotiation outcomes and the formation of coalitions among stakeholders.

Solange Hai and Linda Punt wrote this teaching case under the supervision of Dr Yashar Ghiassi-Farrokhfal at the Rotterdam School of Management (RSM), Erasmus University. *The authors would like to thank Malou Kroezen, Erasmus Centre for Energy Transition, Erasmus University, whose support was instrumental in making this case possible. They also wish to thank Tao Yue, Managing Editor at RSM's Case Development Centre, for her guidance and feedback. Additional thanks to Laura Sanaz Kaschny, Maastricht University, and Mirko Camanna, Erasmus School of Law, Erasmus University, for their feedback and input.*

The case is based on published sources. It was written to provide material for class discussion rather than to illustrate either effective or ineffective handling of a management situation. Identifiable information may have been anonymised or altered to protect confidentiality. Fictitious information may have been included and claims may have been exaggerated or simplified from reality to enhance the effect of class discussion. This material was developed with the assistance of AI for presentation and accessibility (formatting of supplementary materials).

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Issues related to the energy transition are highly relevant and growing in demand, both in education and professional training. Currently, there are very few cases available that teach energy transition topics in a way that is accessible to business, law, or other non-technical students and professionals. In particular, the topic of electricity grid congestion and management is a pressing issue affecting multiple sectors, with high-profile blackouts in the news along with historically high grid management costs.

Target audiences for this learning exercise include pre- and post-experience master's level courses, as well as executive education. For use with bachelor's level courses, the instructor should consider more structured preparation for the exercise. Designed as an inter-disciplinary case, this case can be used in both management and law courses:

- **Management**: courses related to (digital) energy transition, business and society, leadership, and public administration.
- **Law**: courses dealing with energy law, public law, administrative law, and environmental law

To a lesser extent, this case is also suitable for students in scientific faculties such as engineering, especially when applied to more social science courses in those programmes.

This case is part of a set of interdisciplinary cases that aims to bridge the gap between current issues that are technically complex and social science students being prepared to find solutions to increase energy sustainability. The set covers a broad range of topics related to the energy transition, such as citizen engagement, decarbonization policy implementation, diversity and inclusion, as well as corporate finance.