

BA4156 - SUSTAINABLE TRANSITIONS MANAGEMENT AND ENERGY GOVERNANCE

Course Schedule (Monday- Wednesday, 14:40 - 16:15, G108)

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Course Description:

Transition management refers to the systematic approach of guiding an organization through significant changes. It focuses on minimizing disruption while moving from a current state to a desired future state. The goal is to ensure business continuity while successfully implementing organizational changes, ultimately achieving the intended benefits with minimal negative impact on productivity, morale, and stakeholder relationships. Sustainable energy transitions refer to the long-term, fundamental shifts in energy systems away from fossil fuels toward renewable and low-carbon sources such as solar, wind, and other clean energy technologies. These transitions involve not only technological changes but also transformations in policies, institutions, markets, and social practices that shape how energy is produced, distributed, and consumed. The goal is to create energy systems that meet current societal needs while minimizing environmental impacts and ensuring energy security for future generations.

This course examines the transition management approaches and energy policy models to elaborate on sustainable energy transition. To this purpose, the course introduces students to the conceptual framework of transition management in the context of sustainable and green energy transitions and the practical implications of sustainable energy policy models. The course helps students develop awareness about the management of sustainable transitions and energy governance, understand the theoretical framework, main concepts, and strategies of sustainability transitions, and explore models of sustainable energy policies such as the multi-level approach, functional dynamics, and innovation systems. Sustainable transition management provides a systematic approach to steering societal shifts toward more sustainable energy systems by coordinating multi-stakeholder actions across different governance levels. This framework recognizes that energy transitions are complex, long-term processes requiring strategic intervention in socio-technical systems, including technologies, markets, policies, and cultural practices. Effective energy governance within this context involves creating adaptive governance frameworks and arrangements that can facilitate technological change, manage uncertainties, and align diverse actors toward shared sustainability goals.

Course Student Learning Objectives: (CSLOs)

Upon successful completion of this course, students should be able to:

Course Specific Skills:

1. Be acquainted with **basic concepts of transition management and energy policy making**.
2. Have basic tools to **examine general landscape for sustainable transitions management and governance**
3. **Specify the energy problem and choice of solution** in the transition period.
4. Read, analyze and write about how the formers examine and **model the energy policies and manage transition processes at national, regional, sectoral and international level**.
5. Raise awareness about the **concepts of sustainable transitions management, participatory modelling, twin transitions, multi-level approaches and technological innovation system** perspective.
6. **Evaluate and understand the policy documents**, make a critical review, improve the proposals.
7. Draw an **operational framework to find a solution to an energy problem by energy policies**,
8. Have ability to **impose policy proposals** to solve a specific energy problem by analysis of the transition periods.
9. **Develop reasoning for elaborating the sustainable energy transitions** from social sciences and humanities perspectives and socio-technical transitions.

Discipline Specific Skills:

10. differentiate, apply, analyze, and reflect on theories, concepts, commonly used in transition management and energy governance
11. demonstrate broad knowledge of literature and concepts on management practices of sustainable and green transitions and fundamental energy policy modelling approaches.
12. explain the role and impact of sustainable, green and twin transition practices on organizational and managerial behavior.

Personal and Key Skills:

13. develop and improve analytical and critical thinking in specific topics
14. derive reflection skills and improve critical writing
15. manage time and develop responsibility diversion skills

Learning and Teaching Methods:

This course is going to make use of formal lectures, in-class discussions, reading assignments, submission of reflection papers, presentations, midterm and final exams.

Required Reading:

- Strategic Management and Sustainability Transitions (SM&ST): Theory and Practice, Routledge, Ed. Zhang, Michael, Taylor & Francis eBooks (Complete Collection), 2023, METU library e-book access link
- Kemp, R., D. Loorbach and J. Rotmans (2007). *Transition management as a model for managing processes of co-evolution towards sustainable development*. International Journal of Sustainable Development & World Ecology, 14 (1), 78-91
- Loorbach,D., N.Frantzeskaki, R.Lijnis Huffenreuter (2015), *Transition Management: Taking Stock from Governance Experimentation*, in Large Systems Change: An Emerging Field of Transformation and Transitions (ed. McIntosh, S.Waddell, S.Waddock, S.Cornell, D.Denton, M.McLachlan and G.Meszoely, London: Routledge, <https://doi.org/10.4324/9781003579380>
- OECD Green Growth Papers, 2019-04, *A review of "Transition Management strategies- Lessons for Advancing The Green Low-Carbon Transition"*
- Moallemi, E. A., & Malekpour, S. (2017). *A participatory exploratory modelling approach for long-term planning in energy transitions*. Energy Research & Social Science, 35, 205-216. <https://doi.org/10.1016/j.erss.2017.10.022>
- Tabares, S., Parida, V., & Chirumalla, K. (2025). *Twin transition in industrial organizations: Conceptualization, implementation framework, and research agenda*. Technological Forecasting and Social Change, 213, 123995. <https://doi.org/10.1016/j.techfore.2025.123995>
- Chaminade, C. and Edquist, C. (2006). *Rationales for Public Policy Intervention from a Systems of Innovation Approach: The Case of VINNOVA*, CIRCLE Electronic Working Paper Series No: 2006/04, Lund University
- Geels, F. W (2002). *Technological transitions as evolutionary reconfiguration processes: a multi-level perspective and a case-study*. Research Policy, 31, 1257-1274.
- Hekkert, M.P., R.A.A. Suurs, S.O. Negro, S. Kuhlmann, R.E.H.M. Smits (2007). *Functions of innovation systems: A new approach for analysing technological change*. Technological Forecasting & Social Change, 74, 413-432.
- Bergek, A., S. Jacobsson, B. Carlsson, S. Lindmark and A. Rickne, (2008). *Analyzing the functional dynamics of technological innovation systems: a scheme of analysis*. Research Policy, 37 (3), 407-429
- Carlsson, B., S. Jacobsson, M. Holmén and A. Rickne. (2002). *Innovation systems: analytical and methodological issues*. Research Policy, 21 (2), 233-245.
- Jacobsson, S. and A. Bergek, (2011). *Innovation system analyses and sustainability transitions: Contributions and suggestions for research*. Environmental Innovation and Societal Transitions, 1 (1), 41-57.
- Edquist, C. (2011). *Design of innovation policy through diagnostic analysis: identification of systemic problems (or failures)*. Industrial and Corporate Change, 20 (6), 1725-1753

Assessment and Grading:

Form of Assessment	% Contribution	Size of the assessment	CSLOs covered by the assessment	Feedback Method
Midterm Exam	30	Essay-type, multiple choice questions	1-9	Written and oral (in class)
Final Examination	30	Essay-type, multiple choice questions	1-9	Written and oral (in class)
Presentations	15	15 min. Presentations	10-15	Oral
In-class Discussion	10	Discussion participation during regular lectures	13-15	Oral
Attendance	10	Class participation during regular lectures	13-15	-
Written Assignments (2 Reflection Papers)	5	Written Text (<1500 Words)	10-15	Written
Bonus	10	Extra bonus questions in the exam	1-9	Written

Makeup Examinations: There will be no make-ups for assignments and other assessments than midterm and final exams. No make-up exams will be given except in cases of documented illnesses or emergencies (For any emergencies, you must contact me before the exam, inform about the situation and have the consent for make-up via email). If you have a time exam conflict, please contact me ahead of time.

Course Web Page: Note that all information regarding the course will be placed on this course web page. The announcements will be delivered to your student e-mail addresses. It is your responsibility to check this web page at regular intervals and be up-to-date with all relevant information.

Incompletes: A grade of incomplete will not be granted except for the most extreme circumstances and only after stringent verification and approval by the Department. A grade of incomplete will be granted only as a result of circumstances beyond the student's control. A grade of "I" is not given in lieu of an "FF".

Course Policies:

COURSE REQUIREMENTS: Attendance is mandatory in this class and will be graded.

READING ASSIGNMENTS: The following pages give the schedule for the reading assignments. The lectures will stress the most important and/or most difficult material.

REFLECTION PAPERS (HOMEWORK ASSIGNMENTS) and PRESENTATIONS: You are expected to prepare 2 "Reflection Papers" out of 14 Weeks' Readings (RP1 from Part 1 and RP2 from Part 2) and submit via ODTUClass. Depending on the announced programme, there will be at most (two students) groups are expected to make presentation for the assigned readings. The guides for Reflection Paper (Homework assignments) and due dates are posted in ODTUClass. The topics of Reflection Papers, the guide to prepare this paper and the presentation guide are put on ODTUClass. Please remember that it is the student's responsibility to follow the due dates for the assignments.

PRESENTATION SLIDES: A copy of the presentation slides is available at the course web page in the following week of the course. These slides can be used as chapter summaries and utilized while taking down notes during class.

STUDENT DISABILITIES: Any student, who, because of a disabling condition, may require special arrangements in order to meet course requirements, should contact the instructor as soon as possible. Students should present the appropriate documentation from the university's Disability Support Office (Engelsiz ODTÜ Birimi, Merkez Mühendislik Binası 1. Kat Oda No: 115, Tel: 210.7196; engelsiz@metu.edu.tr) verifying their disability, and outlining the special arrangements required. Please note that no accommodations will be provided to the disabled students prior to the completion of this approved University process.

ACADEMIC DISHONESTY: The Department of Business Administration has no tolerance for acts of academic dishonesty. Such acts damage the reputation of METU, the department and the BA/MBA/MS degree and demean the honest efforts of the majority of the students. The minimum penalty for an act of academic dishonesty will be a zero for that assignment or exam. Any form of dishonest behavior for any part of the course, which includes but not limited to; cheating during exams, plagiarizing and inappropriate collaboration in assignments, will ensure a failing grade for the course and will result in further disciplinary action in line with university regulations depending on the severity of the violation.

CHEATING: All university, faculty/institute, and department principles on academic honesty will be strictly enforced. The usual consequence for academic dishonesty is failure of the course and referral of the case to the Dean of the Faculty/Institute for additional disciplinary action. Examinations are individual and are to be completed without outside assistance of any sort. Persons observed cheating during examinations will receive a failing grade in the course. Homework assignments are individual, unless otherwise specified by the instructor, and are to be completed without outside assistance of any sort, as well. Persons observed cheating in their homework assignments will receive a score of zero for the portion of the semester grade that is allocated to such assignments.

PLAGIARISM: The instructor assumes that students will do their own work. By placing their names on assignments (individual or team), students are affirming that the contents are their original work. Any previous work available from files or past students, as well as materials available on the internet may be used only as a suggestive model. Violation of this provision will be considered as unethical behavior, subject to disciplinary action. If you have any doubt about the use of a specific material, see the instructor ahead of time. Any material used from outside sources should be referenced appropriately.

Please read the following documents carefully:

- Academic Rules and Regulations ([in English](#)) ([in Turkish](#))
- Academic Integrity Guide for Students ([in English](#)) and ([in Turkish](#))
- Guide for Rules to Be Followed In an Examination Environment ([in English](#)) and ([in Turkish](#))
- [Academic Calendar](#)

METU HONOR CODE

Every member of METU community adopts the following honor code as one of the core principles of academic life and strives to develop an academic environment where continuous adherence to this code is promoted.

The members of the METU community are reliable, responsible and honorable people who embrace only the success and recognition they deserve, and act with integrity in their use, evaluation and presentation of facts, data and documents."

The instructor assumes that students who attend the next class have understood and accepted to agree with all the requirements and rules of this course.

The following table gives the tentative schedule for the semester. The lectures will stress the most important and/or most difficult material. Appendices are required only if they are assigned. The students are required to read the chapters and appendices before they are covered in class.

Tentative Course Schedule				
M	Day	Topic	Reading/ Assignment	CSLO
PART 1: Sustainable Transition Management				
Feb. (W1)	16-18	Introduction & Transition Management - Conceptual Framework	<ul style="list-style-type: none"> • Course introduction, rules, syllabus and assignments • SM&ST (2023- Chp 1: Costanza, R., B.S. Low, E. Ostrom, and J.A. Wilson, <i>Ecosystems and human systems: A framework for exploring the linkages</i> • Kemp, R., D. Loorbach and J. Rotmans (2007). <i>Transition management as a model for managing processes of co-evolution towards sustainable development</i>. International Journal of Sustainable Development & World Ecology, 14 (1), 78-91. • Loorbahck, D. (2009). <i>Transition Management for Sustainable Development: A Prescriptive, Complexity-Based Governance Framework</i>. Governance, 23(1), 161-183. https://doi.org/10.1111/j.1468-0491.2009.01471.x 	1-15
Feb. (W2)	23-25	Transition Management - -Main Components , and Large System Change	<ul style="list-style-type: none"> • Loorbach,D., N.Frantzeskaki, R.Lijnis Huffenreuter (2015), <i>Transition Management: Taking Stock from Governance Experimentation</i>, in Large Systems Change: An Emerging Field of Transformation and Transitions (ed. McIntosh, S.Waddell, S.Waddock, S.Cornell, D.Dentoni, M.McLachlan and G.Meszoely, London: Routledge, https://doi.org/10.4324/9781003579380 • Kuss, P., & Nicholas, K. A. (2022). <i>A dozen effective interventions to reduce car use in European cities: Lessons learned from a meta-analysis and transition management</i>, Case Studies on Transport Policy, 10(3), 1494-1513. https://doi.org/10.1016/j.cstp.2022.02.001 	1-15
Mar. (W3)	2-4	Transition Management and Business models	<ul style="list-style-type: none"> • SM&ST (2023), Chp 2: Wells, P. <i>Business model innovation for the circular economy: Market, multi-stakeholder, or circular vertical integration?</i> • Joyce, A., & Paquin, R. L. (2016). The triple layered business model canvas: A tool to design more sustainable business models. Journal of Cleaner Production, 135(1), 1474–1486. <i>Presentations</i> 	1-15
Mar. (W4)	9-11	Transition Management Strategies	<ul style="list-style-type: none"> • OECD Green Growth Papers, 2019-04, <i>A review of Transition Management strategies- Lessons for Advancing the Green Low-Carbon Transition</i> • Loorbach,D., Frantzeskaki, N. and R.L. Huffenreuter (2015), <i>Transition Management, Taking Stock from Governance Experimentation</i>, The Journal of Corporate Citizenship, Issue- 58 <i>Presentations</i> 	1-15

Mar. (W5)	16-18	Stakeholders in Transition Management	<ul style="list-style-type: none"> SM&ST (2023) Chp.8: Sadril Shajahan, S. S. Nourin, Md. F. Islam, and Md. A. Akaium. <i>Stakeholders of sustainability transition Interventions in energy and Bangladesh RMG industry</i> SM&ST (2023) Chp.3: Zhang, M. W., <i>Multi-stakeholder ecosystems for sustainability transitions</i> <p><i>Presentations</i></p>	1-15
Mar. (W6)	23-25	Participatory Modeling in Transition Management	<ul style="list-style-type: none"> Moallemi, E. A., Hadjikakou, M., Khatami, S., Malekpour, S., Smajgl, A., Smith, M. S., Voinov, A., Bandari, R., Lamichhane, P., Miller, K. K., Nicholson, E., Novalia, W., Ritchie, E. G., Rojas, A. M., Shaikh, M. A., Szetey, K., & Bryan, B. A. (2021). <i>Evaluating Participatory Modeling Methods for Co-creating Pathways to Sustainability</i>. <i>Earth's Future</i>, 9(3), e2020EF001843. https://doi.org/10.1029/2020EF001843 Moallemi, E. A., & Malekpour, S. (2017). <i>A participatory exploratory modelling approach for long-term planning in energy transitions</i>. <i>Energy Research & Social Science</i>, 35, 205-216. https://doi.org/10.1016/j.erss.2017.10.022 <p><i>Presentations</i></p>	1-15
Mar.- Apr (W7)	30-1	Twin Transitions in Organizations	<ul style="list-style-type: none"> Tabares, S., Parida, V., & Chirumalla, K. (2025). <i>Twin transition in industrial organizations: Conceptualization, implementation framework, and research agenda</i>. <i>Technological Forecasting and Social Change</i>, 213, 123995. https://doi.org/10.1016/j.techfore.2025.123995 Lukas Stratmann, Volker Stich, Ruben Conrad, Gerrit Hoeborn, Felix Optehostert, and Minh Phuc Phong (2023), <i>A Framework for Leveraging Twin Transition in the Manufacturing Industry</i>, in Leipzig et al.ed. (2023), <i>Smart, Sustainable Manufacturing in an Ever-Changing World</i> Abubakr et. Al (2020), <i>Sustainable and Smart Manufacturing: An Integrated Approach</i>, <i>Sustainability</i> 2020, 12, 2280; doi:10.3390/su12062280 <p><i>Presentations</i></p>	1-15
Apr (W8)	6-8	Submission of Reflection Paper 1..... April 6, 2026 (23.59) - Part 1 Readings MIDTERM..... April 8, 2026 15.00-16.30		
PART 2: Energy Governance				
Apr (W9)	13-15	Theories of Energy Policy Making: Neoclassical vs Evolutionary Policy Modelling	<ul style="list-style-type: none"> Chaminade, C. and Edquist, C. (2006). <i>Rationales for Public Policy Intervention from a Systems of Innovation Approach: The Case of VINNOVA</i>, CIRCLE Electronic Working Paper Series No: 2006/04, Lund University. Jacobsson, S. and V. Lauber. (2006). <i>The politics and policy of energy system Transformation-Explaining the German diffusion of renewable energy technology</i>. <i>Energy Policy</i>, 34 (3), 256–276. <p><i>Presentations</i></p>	1-15
Apr (W10)	20-22	Multi-Level Approaches in Sustainable Transitions	<ul style="list-style-type: none"> SM&ST (2023) Chp.4: M.Tomenendal, N.Abdelkafi,, H.Rüdiger Lange, and H. Winkler, <i>Managing the coal exit in a mining region – Strategic landscape design and niche management for a sustainable socio-technical regime in Lusatia</i> Geels, F. W (2002). <i>Technological transitions as evolutionary reconfiguration processes: a multi-level perspective and a case-study</i>. <i>Research Policy</i>, 31, 1257–1274. <p><i>Presentations</i></p>	1-15
Apr (W11)	27-29	Innovation Systems Approaches	<ul style="list-style-type: none"> SM&ST (2023) Chp.5: Ploude, Y. <i>Creating a better food system Reinventing the way we grow food in cities</i> Markard, J., Raven, R., & Truffer, B. (2012). <i>Sustainability transitions: An emerging field of research and its prospects</i>. <i>Research Policy</i>, 41, 955–967. 	1-15

			<ul style="list-style-type: none"> Carlsson, B., S. Jacobsson, M. Holmén and A. Rickne. (2002). <i>Innovation systems: analytical and methodological issues</i>. Research Policy, 21 (2), 233-245. Jacobsson, S. and A. Bergek, (2011). <i>Innovation system analyses and sustainability transitions: Contributions and suggestions for research</i>. Environmental Innovation and Societal Transitions, 1 (1), 41–57. <p><i>Presentations</i></p>	
May (W12)	4-6	Networks Externalities and Functional Dynamics Analysis	<ul style="list-style-type: none"> Hekkert, M.P., R.A.A. Suurs, S.O. Negro, S. Kuhlmann, R.E.H.M. Smits (2007). <i>Functions of innovation systems: A new approach for analysing technological change</i>. Technological Forecasting & Social Change, 74, 413–432. Bergek, A., S. Jacobsson, B. Carlsson, S. Lindmark and A. Rickne, (2008). <i>Analyzing the functional dynamics of technological innovation systems: a scheme of analysis</i>. Research Policy, 37 (3), 407–429 SM&ST (2023) Chp.6 , Berg, M aand D. Holtbrugge, <i>Sustainability transitions through electric vehicles: The relevance of network externalities</i> <p><i>Presentations</i></p>	1-15
May (W13)	11-13	Analysis of Energy Landscape	<ul style="list-style-type: none"> Edquist, C. (2011). <i>Design of innovation policy through diagnostic analysis: identification of systemic problems (or failures)</i>. Industrial and Corporate Change, 20 (6), 1725–1753. Metcalfe, D. (1995). <i>The Economic Foundations of Technology Policy: Equilibrium and Evolutionary Perspectives</i>. In P. Stoneman (Ed.). <i>Handbook of the Economics of Innovation and Technological Change</i>. (409-513). Oxford, UK and Cambridge, USA: Blackwell. Mowery, D. (1995). <i>The Practice of Technology Policy</i>. In P. Stoneman (Ed.). <i>Handbook of the Economics of Innovation and Technological Change</i>. (513-558). Oxford, UK and Cambridge, USA: Blackwell. <p><i>Presentations</i></p>	1-15
May (W14)	18-20	Cases	<p>Case Study 1: Solar Energy in Turkiye in the context of EU</p> <ul style="list-style-type: none"> Legal framework documents in Turkish Solar Energy Case: Laws (such as Electricity Market Law-6446), Regulations (such as License Regulation), Communications (such as Communication about Enforcement of Unlicensed Electricity Generation) Celiktas, M.S, T. Sevgili, G. Kocar, A snapshot of renewable energy research in Turkey, Renewable Energy 34 (2009) 1479–1486 <p>Case Study 2: Green Deal – Renewable Energy Diffusion in EUROPE</p> <ul style="list-style-type: none"> Silvia Blasi & Silvia Rita Sedita (2020) The diffusion of a policy innovation in the energy sector: evidence from the collective switching case in Europe, Industry and Innovation, 27:6, 680-704, DOI: 10.1080/13662716.2019.1616535 A European Green Deal, https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en <p><i>Presentations</i></p>	1-15
May (W15)	25-27		<p>Religious holiday</p> <p>Submission of Reflection Paper 2 (May 27, 2026 23.59) - Part 2 Readings</p>	
June (W16)	1-3	Cases	<p>Case 3: H-Europe- Mission Oriented Policies</p> <ul style="list-style-type: none"> Horizon Europe: https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe_en Mission-oriented policy studies and reports: https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe_en 	1-15

[and-open-calls/horizon-europe/missions-horizon-europe/mission-oriented-policy-studies-and-reports_en](https://ec.europa.eu/info/sites/default/files/research_and_innovation/funding/documents/ec_rtd_he-partnerships-clean-energy-transition.pdf)

Case 4: Clean Energy Transition Partnership –CINEA

European Partnership under Horizon Europe Clean Energy Transition

https://ec.europa.eu/info/sites/default/files/research_and_innovation/funding/documents/ec_rtd_he-partnerships-clean-energy-transition.pdf

Presentations