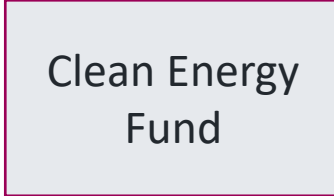
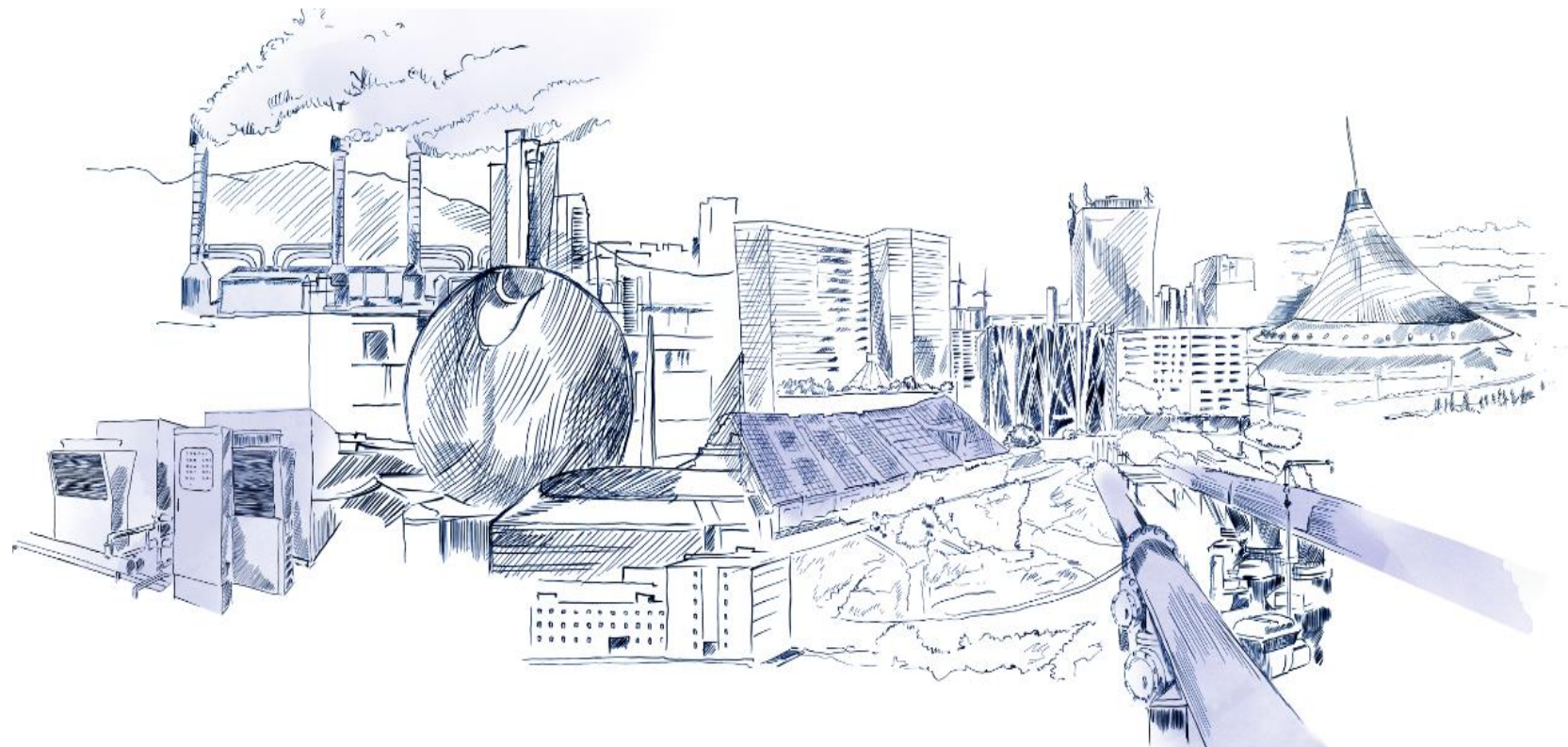


# "Modern Heat System Management" training course – ADB knowledge product



Webinar Course in connection with the preparation of the Law of the Republic of  
Kazakhstan "On Heating"



Ilka Lewington

08.06.2023

1. Dornier Group and the ADB Project
2. Training course preparation, design and implementation
3. The training course as an ADB knowledge product

## MOBILITY



The designers of Mobility

## WATER



The specialists for water resources

## NUCLEAR SERVICES



The professionals for nuclear decommissioning

## POWER AND HEAT



The experts for energy

## RENEWABLES



The guides of the energy transition

Strategic and operational services related to the **"growth fields of tomorrow"** that are emerging as a result of the **electricity, heat, transport and water transition.** Making a contribution to a sustainable future.



YouTube



Video

## ADB TA 6564 KAZ Supporting Renewable Technology inclusive Heat Supply Legislation (2020 – 2023)

- Assess the existing situation,
- Develop a suitable heat supply sector model,
- Draft the new legislative package on heat supply based on international practice replicable in Kazakhstan, with focus on renewable energy integration and participation of the private sector (PPP),
- Support the consultation process, undertake capacity building.

**The Draft Law «On Heating» is currently being debated in the Parliament. It is expected to pass soon. 7 main documents of secondary legislation are developed and „ready to go“.**



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## Due diligence found substantial weaknesses



Reliability



Efficiency

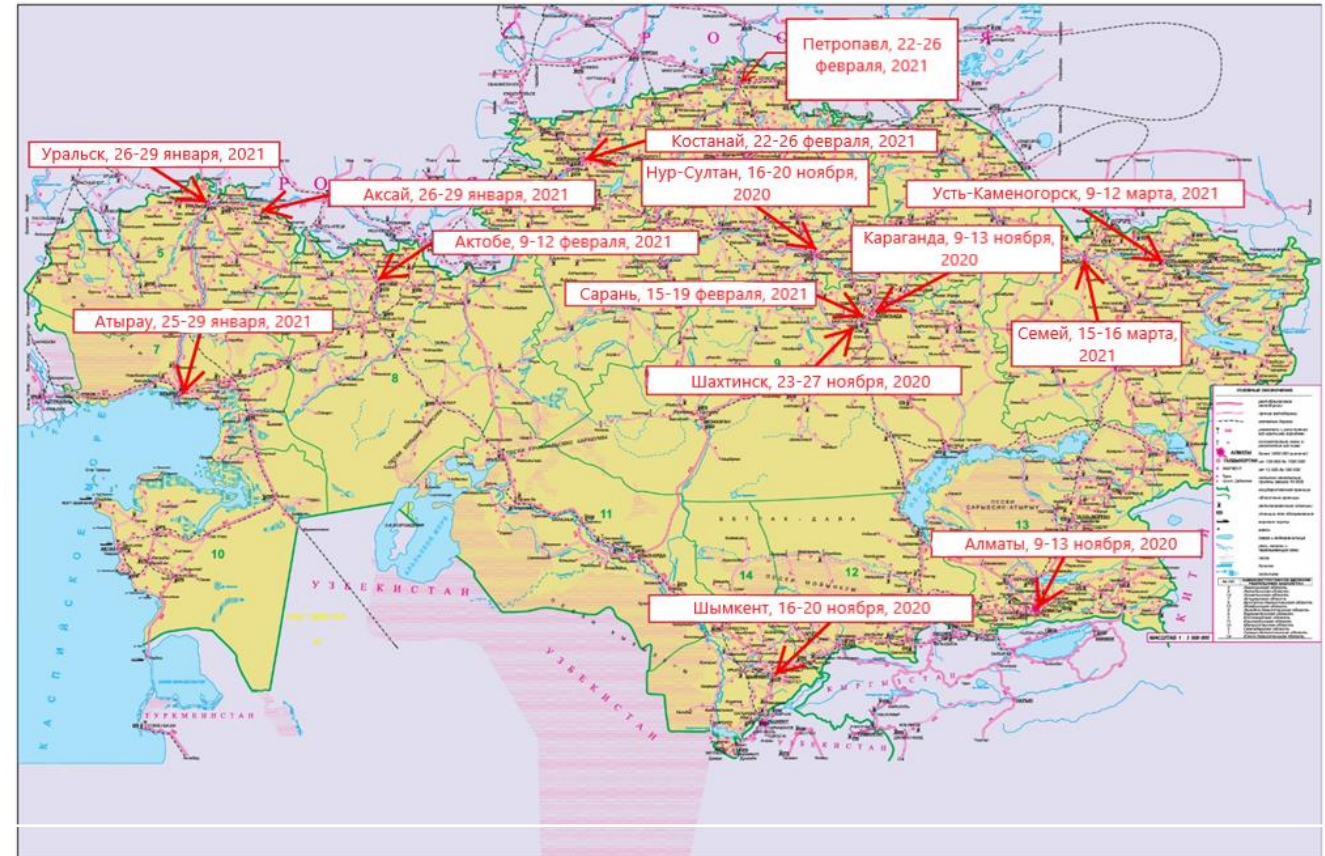


Sustainability

## Detailed comparison with suitable comparator jurisdictions



- Legislative, institutional, regulatory structure
- Efficient and effective technologies
- Use of renewable energy sources
- Approaches to planning
- Tariff regulation and tariff structure
- Support of vulnerable consumers
- Professional capacity and gender equality
- Involvement of private sector

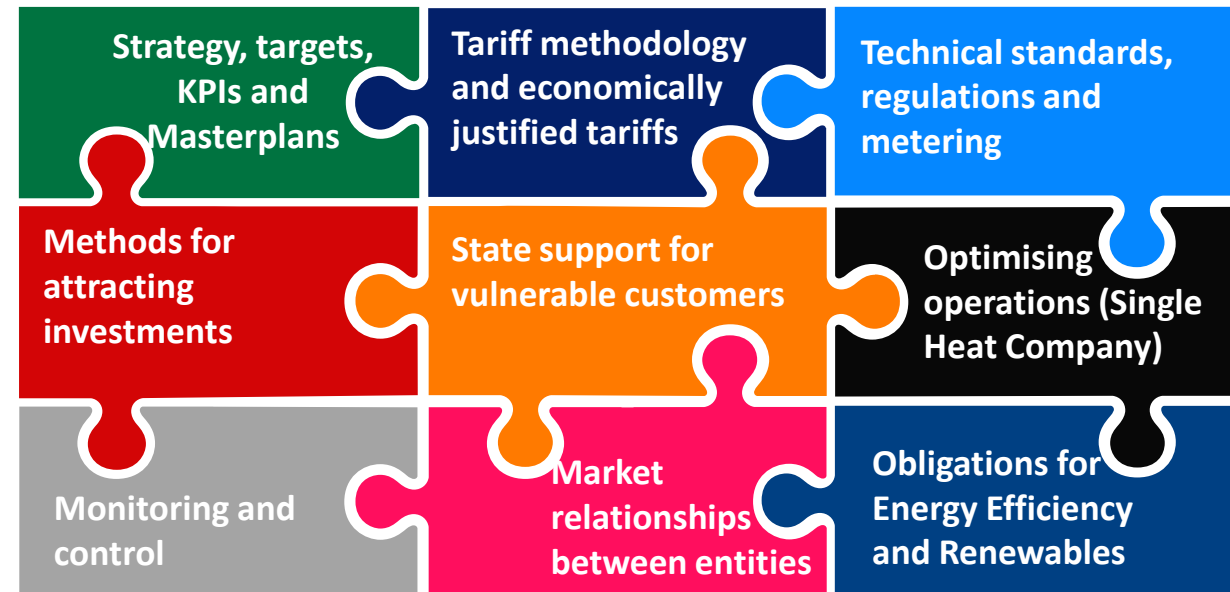


Technical Due Diligence in 14 cities

## Which areas of international experience are little known by Kazakhstan's heat sector professionals?

- Practical deployment of renewable heating
- Technical methods of increasing efficiency of heat production, transport, consumption
- Heat sector planning
- Models of PPP
- Heat tariff setting (regulation, structure, etc.)
- Practical implementation of support to vulnerable consumers
- Gender equality in the heat sector

## What are the main components of the new legislation for which Kazakhstan's heat sector professionals need to prepare?




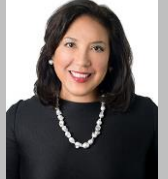
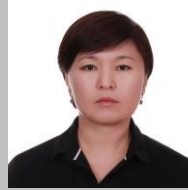



**Course needs to provide systematic theoretical and practical knowledge on technical, economic and institutional aspects of modern heat sector**

# Training course content

<b>Module 1</b>	Heat sector technologies
<b>Module 2</b>	Heat sector planning
<b>Module 3</b>	Heat sector economics and tariffs
<b>Module 4</b>	Heat sector policy, governance and other institutional aspects

Day/ Date	Topic and link	Main Speakers
Tuesday 17/05	Introduction and  4.1. Heat sector policy organisation, regulation and the sustainability agenda	 Ilka Lewington
Wednesday 18/05	1.1 Heat production (traditional and alternative technologies for district heating; role and advantages of renewable heating technologies)	 Sergei Herzog
Friday 20/05	1.2. Heat distribution systems (Temperature regimes, system design, loss reduction etc.)	 Sergei Polishuk
Tuesday 24/05	1.3. Organisation and administration of heat supply (systems within the buildings, metering, billing)	
Wednesday 25/05	2.1. Heat system planning – Introduction to methodology	 Lennart Larsson
Friday 27/05	2.2. Production system modelling, including the integration of RES and energy efficiency measures	

Day/ Date	Topic and link	Main Speakers
Tuesday 31/05	2.3. Planning the integration of RES and energy efficiency measures in local centralized systems	 Sergei Polishuk
Wednesday 01/06	2.4. Planning the integration of RES and energy efficiency in individual heating systems	 Ilka Lewington
Friday 03/06	2.5. Municipal heat sector planning	
Tuesday 07/06	3.1. Principles, authority and methods of heat tariff regulation	 Oleksandr Rogozin
Wednesday 08/06	3.2. Heat Tariff Methodology for Kazakhstan	
Friday 10/06	3.3. Support for vulnerable customers – methodology and recommendations	
Tuesday 14/06	4.2. Private Public Partnership (PPP) in the Heating Sector	 Maria Tan-Pedersen
Wednesday 15/06	4.3. The role of women in sustainable development of the Heating Sector	 Evgenia Kozyreva  Dinara Tambaeva



**Academic partner:**  **DEUTSCH KASACHISCHE UNIVERSITÄT** Centre of Natural Resources and Sustainable Development

- ✓ Advice on course structure
- ✓ Invitations, registrations, IT support
- ✓ Monitoring attendance
- ✓ Recording and managing feedback
- ✓ Preparation of youtube videos

## Timing, structure and delivery:

- ✓ Tuesdays, Wednesdays and Fridays at same timeslot towards the end of the working day
- ✓ Most international experts delivering in native language
- ✓ 30-45 min “Lecture”
- ✓ 30 min “Discussion”
- ✓ 30 min “Round up or Case Study”
- ✓ On-line “Quiz” with immediate results shown and discussed

## Participants:

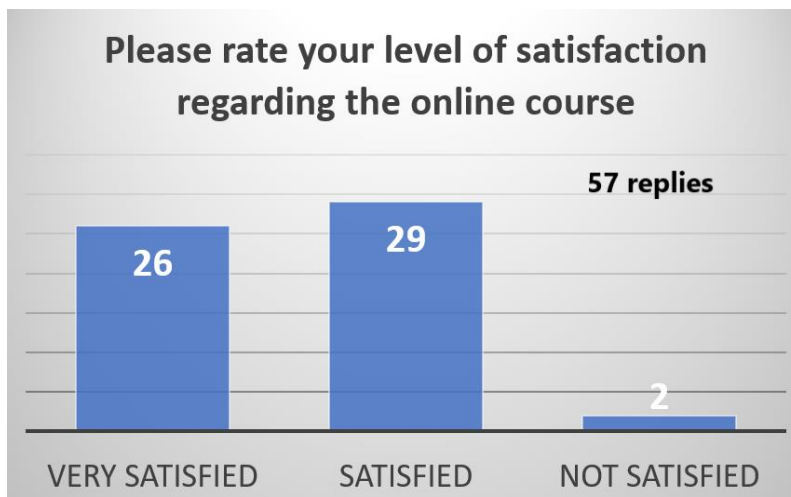
- ✓ Through the official legislative Working Group
- ✓ Public announcements through the University networks
- ✓ Joint Certificate of DKU and DORNIER Academy

Stakeholder groups present in the official Working Group of the Ministry of Energy for the consultation process related to new heat sector legislation	Members
Ministry of Energy	9
Ministry of National Economy	3
Ministry of Industry and Infrastructural Development	4
Ministry of Digital development, Innovations and Aerospace Industry	1
Ministry of Ecology, Geology, and Natural Resources	1
Ministry of Labor and Social Protection of Population	1
Agency for Protection and Development of Competition	2
Local authorities (Regional Departments of Energy, Housing and Utilities, Municipal Economy)	19
Companies and organisations active in the heating sector	63
Consumer or civil society representatives	5
Academic institutions	4
Development institutions	4
Mining companies	14
Power plants	9
<b>Total</b>	<b>139</b>

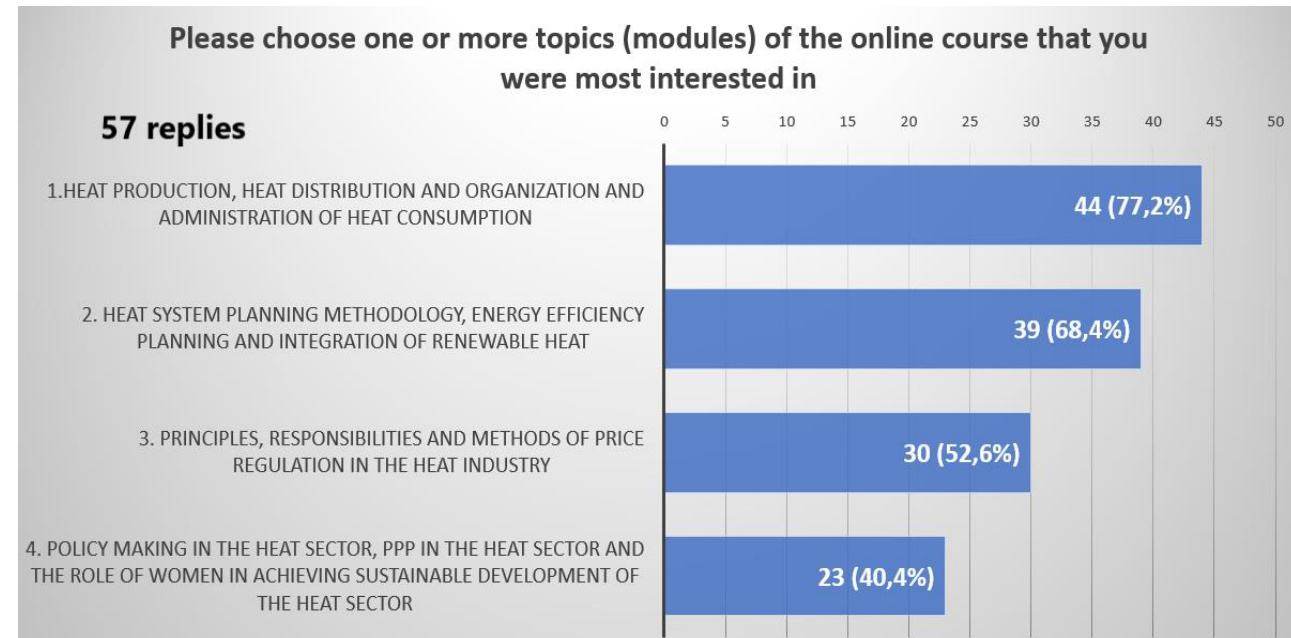
## Participation:

- ✓ 158 people confirmed their participation, i.e., personally registered at DKU's website.
- ✓ Actual attendance varied within a range of 51÷111 participants for a session.
- ✓ 41 participants, who attended 7 or more sessions, received Certificates of Attendance, 24 of them are women.

## Satisfaction:



## Interests:



1. Dornier Group and the ADB Project
2. Training course preparation, design and implementation
3. **The training course as an ADB knowledge product**

## The training course demonstrated:

- ✓ Systematic transfer of knowledge on the main issues of modern heat sectors creates the understanding necessary for stakeholders to embrace the changes that are required.
- ✓ Running the course as a public professional development event, with tailored topics and academically sound tools and methodologies, creates a forum for stakeholders to discuss problems, exchange ideas about solutions, feel like a team.
- ✓ The training course played a direct role in the legal drafting process. Opinions and insights voiced (see info on additional slides) contributed to fine tuning concepts and wordings in the legislation.

## The training course reflected the complexities of the heat sector transition:

- ✓ The 4 topic areas were separate to allow focus and deep, systematic transfer of knowledge. However, in the delivery the sessions were interlinked:
  - In technical topics, the economic implications were also mentioned. In economic topics, the technical issues were competently integrated. The cross-cutting nature of institutional issues was embraced throughout.
  - Discussion and survey questions challenged the participants to cross reference sessions and think through implications of options.
- ✓ A whole topic area was devoted to heat sector planning – the major tool of successful heat sector transition towards sustainability, presenting cutting edge insights from the new requirements and tools introduced in the EU.
- ✓ Course delivery tailored to sector professionals' requirements (timing, language)

## Module 1: Technologies

- ✓ “Renewable Heating Technology Catalogue” provided by the project considered vital help for policymakers and companies.
- ✓ Introduction of any renewable based heating will require substantial effort, including comprehensive technical measures, such as reducing temperature regime in the networks
- ✓ Role of central heating paramount – 64.5% stating that this option should be available to all consumers, and 90% considering the modernization of central heating, with increased tariffs, preferable to the transition to individual heating, despite the current dilapidated state of the infrastructure.
- ✓ Realism about tariffs - nearly 90% of participants agreed that tariff increases would be unavoidable.
- ✓ Nearly all participants considered thermo-modernisation of apartments essential and would be prepared to pay for it.

## Module 2: Planning

- ✓ “Renewable Heating Technology Catalogue” provided by the project considered vital help for policymakers and companies, but more information is needed
- ✓ Heat System Production Modelling methodology and the shown assumptions considered directly, or with adaptation, applicable in Kazakhstan, if additional training would be provided.
- ✓ Planning methodology should be officially approved as normative document.
- ✓ Resource conservation and ecological issues considered very relevant for Kazakhstan,
- ✓ Guidance for the development of legislation:
  - time horizon of 5-10 years best for the Masterplan
  - requirement for Municipal Heat Plan (Masterplan) development must be stated explicitly in the primary legislation,
  - timeframe of 2 years is envisaged for the development of the first Masterplan
- ✓ Split opinion about centrality of CO2 emission reduction KPI: On the question whether CO2 emission reduction could become, as in the German example, the “central KPI” for a Masterplan, 42.2% of participants said “not now, but in 5 years’ time yes”. Also 42.2 % stated that this could never become the central driving KPI.

## Module 3: Tariffs

- ✓ Majority support for continued, but improved regulation of all heat tariffs
- ✓ The main reasons for “lost 20 years” in heating system modernization and expansion, considered “state policy”, only 6.7% “blamed” the consumers for not being willing to fund investments.
- ✓ Benefits of multi-part tariffs not understood
- ✓ Support for “more or less equal tariffs across Kazakhstan” – something very far from the current situation, and which would require enormous efforts to rebalance.
- ✓ 91.4% supported a “separate designated tariff methodology for heating” which should, according to 87.9% of participants “contain detailed approaches and formulas”.
- ✓ About half of the respondents favored a yearly tariff review, which is what the project team is recommending.
- ✓ 84.5% agreed that any subsidies entering the heating sector should be explicitly accounted for
- ✓ Damages of cross subsidization well understood
- ✓ Only 15.4% were in favor of keeping heat tariff low as a method of support – most (around 60%) were in favor of budget support.

## Module 4: Selected institutional topics

- ✓ Role of long-term and comprehensive heat sector planning recognized as “extremely important” by nearly 100% of participants,
- ✓ Huge potential in CO2 emission reductions the heat sector recognized by overwhelming majority
- ✓ PPP concept quite new for most of the participants, and half of the respondents remark on the lack of understanding by stakeholders of PPP features and concepts,
- ✓ 80% of respondents said they would be interested in looking into concrete PPP proposals
- ✓ Participants recognized the benefits of PPP mainly in the area of increased access to project financing and minimization of risk assumed by the government, they did not (yet) see that PPP brings the access to innovative solutions as a major benefit.
- ✓ The suitable forms of PPP were recognized in equal proportions to be Management contract, Leasing and Concessions. The understanding of the ESCO concept as a PPP form is still limited.
- ✓ Gender considered a certain barrier to career advancement,
- ✓ Lack of adequate working conditions allowing women to properly combine work and family responsibilities considered the main factor holding back women as employees and managers in the energy sector, including heating.
- ✓ The existence of negative stereotypes was also considered significant. Only half of the respondents felt that utilities already have a good standing in terms of flexible working hours and maternity leave.

## Self-study for professionals:

- ✓ Course suitable for self-study in Kazakhstan and other countries
- ✓ Course suitable as systematic “basic course” for an overview of all major heat sector issues
- ✓ Course also suitable for deeper study of specific topics:
  - Technology – separately for heat generation, transport and supply/customer interface
  - Heat sector planning, including Production System Modelling and the development of Municipal Heating Plans (Masterplans)
  - Economic topics (tariffs, support of vulnerable customers)
  - Renewable heating options and energy efficiency
  - PPP models
- ✓ Video sessions with English subtitles and slides available

## For governments and IFIs to advance the transition to sustainable heating sector:

- ✓ Course can provide structure and some benchmarks for assessing challenges and priorities for any country’s heat sector (Information on Kazakhstan situation used in the course materials can act as a Case Study)
- ✓ Adapting and re-running the course for groups of professionals may create a framework for productive change and stakeholder co-operation to address the heat sector issues specific to the country
- ✓ Course structure, content, tools and methods may be used as basis for creating an academic program tailored to the needs of the heat energy sector

# Here are the links. And let's stay in touch

Link to playlist on Youtube with 14 videos. Playlist starts with 4.1 session. <https://youtube.com/playlist?list=PLSvhvfIMBPc0Ls0hNdhdC4QlmaaP5EitE>

Materials (English) [https://drive.google.com/drive/folders/1ZrQPC7W4d0a7sY5ssJr1IS\\_upYURA8dy?usp=sharing](https://drive.google.com/drive/folders/1ZrQPC7W4d0a7sY5ssJr1IS_upYURA8dy?usp=sharing)



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