

**THEORETICAL ANALYSIS  
OF THE ENERGY  
EFFICIENCY POLICY  
CONCEPT: JAPAN AND  
GERMANY'S EXPERIENCE  
TO KAZAKHSTAN****Introduction**

The matter of rational energy distribution and consumption is of high importance of Kazakhstani political elite. Nevertheless, it is difficult to characterize Kazakhstan as an energy saving country. At first, Kazakhstan is an exporter rather than an importer of energy. Secondly, Kazakhstan did not suffer from the consequences of the 1970's energy crisis to the extent that was familiar to all developed countries. Meanwhile, the current state of the technologies efficiency is lower than 30% though it allows to have energy use performance coefficient not less than 50-60%. In addition, the potential to increase energy export by reducing domestic demand; opportunity to enhance the competitiveness of products due to the fact that they were made in accordance with international standards of energy efficiency; possibility to reduce the cost of products due to their manufacturing will take less energy; possibility to demonstrate Kazakhstani commitment to the principles of international environmental protection serve as incentives to implement energy efficiency policy as well. Taking into consideration these factors, the government will attempt to raise the case of energy efficiency by means of the International special exhibition «EXPO-2017» which will be held in Astana in 2017. It is meant to attract foreign investments to domestic designers whose engineering achievements will be demonstrated at the «EXPO-2017». This event could serve as an impulse to a massive transition to clean energy in Kazakhstan. Thus, the «EXPO-2017» is going to be not just a symbolic event, but also an excellent chance to demonstrate our intention to cooperate in the field of energy efficiency. In this regard the study of theoretical approaches is an integral part of any sphere. It bridges two inseparable stages of lifetime process – theoretical knowledge and practice.

**Theorizing energy efficiency: definition and indicators**

Energy policy consists of two main parts: policy and energy efficiency. According to the 'Energy indicators for sustainable development: guidelines and methodologies» report, published by International Energy Agency, the economic dimension includes 16 particular indicators: the total GDP and per capita, consumption by

each sector, share of renewable energy sources, the end-use of energy costs. The methods and approaches to implement energy effective policy are the most questioned. In this study an attempt to analyze public policy theories, their correlation to energy efficiency policy and the practice of energy efficiency in Germany, Japan and are going to be covered.

Public policy allows, recommends, accepts, guides, directs one or another process in the state's everyday life, due to which it is usually associated with decision-making. «Public Policy is a very complex, dynamic process whose various components make different contributions to it». It has a number of inherent characteristics: it varies in time, location, goals, problems. Then it turns out that public policy is a powerful tool that determines any part of state's development. If public policy is the power that can be operated, then there are its owners respectively. The literature on public policy provides a bulk of actors, which initiate the policy, i.e. which not so much make it as are able to influence on it. Public policy approaches explain who and how make decisions, i.e. the role and relationship, cause and effect, variation and change, as well as the consequences of the policy-crafting process.

### **Public policy main theories: actors**

Thomas A. Birkland distinguishes several groups of theories, which simplifies the public policy process understanding: according to participation of various actors in the political process (agenda setting and pursuing of policy) institutionalism, social constructivism, theory of elites; according to decision-making process rational comprehensive decision making, bounded rationality and incrementalism, punctuated equilibrium; and in accordance with the public policy process itself the public policy cycle, Kingdon's streams metaphor, the Advocacy Coalition Framework (ACF) and punctuated equilibrium are identified. Thus they are responsible for different components of public policy, which means that in order to answer the research question several theories should be taken into consideration, the use of which will reveal the holistic picture of Japanese and Kazakhstani public policy.

#### *The theory of institutions*

The theory of institutions is the classical one for public policy. The state is a set of institutions that take into account, consider, adopt (or reject) and implement a particular policy, which is directly connected with the separation of power into three branches, executive, legislative and judicial, «as

organizations... in which individuals interact and achieve political and policy goals through explicit or implicit rules as operating procedures». Legislative power is «the most active and perhaps the most important of the three branches», however this statement may vary depending on the state's belonging to parliamentary or presidential republic, where in the latter case the legislature plays coordinating role. Ideal system of checks and balances represents legislative and executive branches as equal, where the former one is a core decision maker and plays communicational function with society. It has a certain set of tools which ensure equilibrium, from hearings, commissions' investigations to delays «the passage of a policy proposal».

The executive branch can be associated with both a president (in presidential republics) and a Prime Minister (in parliamentary) in the charge of cabinet. In the first case, the president has the right to veto the law, appoint the head of cabinet and dissolve parliament, the president represents the nation in the international arena. In the second case, the Prime Minister has the administration (office) «which derived from and...responsible to the legislature». Ideally, the executive power implements policies and controls its implementation by means of the bureaucracy, alternatively, it can also impact on decision making.

Bureaucracy role assessment is rather ambiguous in the political process: according to Max Weber «bureaucracies were an important innovation of the modern age», though all the many complain about its «sheer size». Bureaucracy is a system implementing laws and providing the linkage between them and society, to what extent the bureaucracy functions effectively describes its significance, and its procedural nature characterizes its readiness to perform these functions.

The judiciary branch role in public policy making is that it is applying for and interpreting laws functions. If a law does not find a solution in the sense that its adoption in parliament is highly debated, the court has the right to consider the request from one of the sides and make its own decision, using the functions entrusted to it. Additionally, if a certain socio-political phenomenon, brought to trial, is ignored by other branches, the trial could point it out and set agenda.

Political parties are the voice, «forming» and preparing a candidate to «speak» for people. Due to elected representatives society forms an opinion reflecting current situation status «the role of political parties is to influence the ideas and beliefs of

citizens on public policy and so affect their electoral decisions, which themselves define the strength of a given party in the legislature and/or the executive».

Institutionalism is the public policy classical theory due to its direct connections with the state as the main defining policy actor, which gives impetus to policy, controls and terminates it if it is necessary. In XXI century the state's activity in public policy process is being transformed: it is still an important decision maker since its establishment, the regulatory role was entrusted to it, however, new players appear, so-called social groups, interest groups, elites can attract attention to certain problems, set agenda as well. Here the role of the state is shifting since it takes new actors' points of view into consideration. This is what causes debates in the scientific world, giving rise to new theories of public policy.

#### *The theory of social construction*

Social construction assumptions make an attempt to reflect social groups' opinion importance. Political decision-making is a matter of weighing «pros» and «cons». It is impossible to please everyone: hence the public divides into those who have influence (the theory of elites), those who advantaged the solved issue and disadvantaged (losing) who keeps struggling for the change (groups theory). The latter ones use so-called «symbols and images» in order to attract the attention of those whom they were initially ignored: the media, ordinary people. Agenda setting is a rivalry between weak and strong communities, where the latter ones, forming «political monopoly», are trying «to keep problems and underlying policy issues low on the agenda» and the former ones are trying to make their symbols, that «construct their visions of problems, causation and solution», visible and questioned. This struggle continues till the weaker groups efforts are noticed, resulting in paid attention by higher authorities, then there is an opportunity to change policy direction, at the same time weak and strong groups are swapped. This is the process of agenda setting in the frameworks of social groups theory: it is quite resistant, requires huge inputs (both moral and material), in contrast, much less efforts are needed to pay political attention on certain aspects when it comes to elites. The theory of elites divides society into those who have power (or anyone directly connected to it), and those who do not have (masses): «Elites have higher income, more education, and higher status than the mass ... whereas [public policy may be viewed as the values and preferences of a governing elite]».

In this case public opinion is «political because the bias of the political system allows them to be

raised». In other words, the theory of elites is an explanation of the reasons why some issues are resolved and they are considered, while others are ignored. In this case, it is important to know how the elite views a problem: if it is not within the scope of its interests, the problem (according to the theory) will not be solved or its solution will require a lot of effort and time – this is how the theory of elites explains what issue can be set as agenda.

How rational or adequate theories of social groups or elites justify the role of informal actors in public policy, they explain only the problem appearance or identification, then it comes (or not) to the official actors to consider, make or object the decision, i.e. to state institutions, due to they are authorized to do so. In this regard the opinion of groups or elites might be taken into account: via their reaction to certain policy the policy's development itself varies (if society or elites are not satisfied with pursuing policy, it might be revised or terminated), at the same time all the changes are held by official institutions.

There are different approaches to define the decision-making process and its stages as well. Representatives of rational comprehensive decision making argue that it is necessary to consider the issue from different angles and sides, to provide all theoretically possible goals or approaches to its solution in order to make correct decisions. This theory has a few disadvantages: it is impossible to find all available information on a specific issue, it is physically impossible (if the problem has never been touched, it is dynamic and steadily changing); since policy making is bounded by societal aspects the most important decisions should be chosen regardless any doubts on certain decision's rationality. This makes the decision-making process even more confusing, because politicians may seem that each solution to some extent is true as well as false. Such criticism has prompted further research on decision-making.

As a result the concept of bounded rationality and incrementalism appeared, where limits to consider a specific policy are taken for granted. This theory was interpreted by Charles Lindblom in «The Science of Muddling Through» (1959), who compared it with the rational comprehensive decision making, where the latter is «the root» of decision making and incrementalism (a slight change of previous policy) is «the branch» or continuation of «build on past policies». This theory is based on existing and past experience, ignores both alternatives and future possible outcomes (positive and negative), which disadvantages it.

### Public policy main theories: process

The theories of decision-making are connected with the policy-making stages theories in some sense: for them the decision-making considers as the stage of the entire political process, often preceding policy implementation (public policy cycle).

#### *The public policy cycle theory*

The public policy cycle is the classical theory, which divides the entire political process into certain stages: agenda setting – issues, problems that require special governmental attention are identified; policy formulation – objectives are set, solutions are decided, policy tools are chosen; legitimation – procedures that should be passed in order to the policy to go into force; implementation assumes that special institutions or organizations to be responsible for the policy pursuing are assigned; the evaluation stage is connected with the policy's future – if the policy is assessed as effective (successful), it continues to pursue, if it fails to achieve the main goals of the policy formulation stage, it will, presumably, be terminated or at least revised, i.e. it returns to the first or second stage. Thus, the public policy process is not linear. The best policy turns into outdated and requires revision eventually, if it was effective in certain time and circumstances' conditions, it does not mean that the time and circumstances never change. Cycles' theory is useful in the sense that it presents the entire political process as stages, however, these stages can be diffused (i.e. their order is not strict) as well as «it does not explain...how the policy is made».

#### *Kingdon's streams metaphor theory*

New models of the public policy process attempt to explain the things that the cycles' theory can't: where the policy is derived from. Thus, Kingdon's streams metaphor model suggests that there is a so-called window of opportunity, or a certain moment or occasion is happened and a certain problem reaches its destination – to be considered. In this regard, three «streams», problem («the attributes of a problem»), politics («the state of politics and public opinion») and policy («potential solutions to a problem»), should «meet the window of opportunity». The disadvantage of this model is that it does not explain what happens after three streams meet the window «the window does not guarantee that policy change will occur».

#### *Sabatier and Jenkins-Smith's Advocacy Coalition Framework theory*

However, this model gave «birth» to another model, which is Sabatier and Jenkins-Smith's Advocacy Coalition Framework (ACF). As well as the Kingdon's model, Sabatier and Jenkins-Smith's

model takes into account different actors, and the process of public policy is seen as «iterative process that runs over years and decades». The ACF is a quite complex and solid theory that explains the political process as well as the political change idea emergence, the actors' role in decision-making and takes into account external influence: the entire political system is represented by the primary subsystem where so-called advocacy coalitions (at least two) interact with each other based on their specific policy core beliefs, so-called mediators (policy brokers) help them to strike a balance and bring their ideas to the «Governmental Authorities» which make key decisions. Policy changes when internal dominant coalitions realize that the new policy is going to be effective («policy-oriented learning») or when the subsystem suffers from external influence («(non-cognitive) events») which are «relatively stable» (social and legal structure, cultural values) and «dynamic» («changes in socio-economic conditions and technology, changes in public opinion», etc.). This theory's complexity is both an advantage and drawback of it: it attempts to explain everything regardless the public policy system behaves unpredictably. Another weakness is that it «takes years to turn decisions into outcomes», which means that before decision is made, it should be agreed among all the coalitions involved. «Bargains» among coalitions may last very long time, if they reached minor compromise then it will lead to «minor policy change», which results in defective, incompleting main goals, policy.

#### *The punctuated equilibrium theory*

Punctuated equilibrium is mentioned twice for a reason: this theory explains both the cycle and the momentum for political change. The main terms the theory uses are «political monopoly», which is «closed system of the most important actors in policy making», and a «break down». Equilibrium is a state of balancing between political monopoly (subsystem) within the state system and society, punctuation is the event that disrupts the balance, «opens» and completely breaks the subsystem by involving the media, interest groups and attract the masses attention. As the process-describing theory it envisages policy as «the long periods of stability followed by rapid change, followed again by long periods of stability». This theory is better to explain the causes of changes in policies (agenda setting), rather than to explain the political decision-making process (that is weakness).

Overall, the theories of social constructivism, punctuated equilibrium, Kingdon's streams metaphor, the Advocacy Coalition Framework (ACF) and punctuated equilibrium focus on

changing attitudes from the classical bias top-down (which includes institutionalism and elite theory, suggesting that policy is made and implemented from the «top» and excludes the active role of society in the process) to bottom-up (where the idea of adopting a new policy is set by society groups, i.e. from the bottom to the top) policy making. Rational comprehensive decision making, bounded rationality and incrementalism, the cycle of public policy are lack of such subjectivity and consider all political actors. It is also important to remember already mentioned fact that the decisions are still made and implemented by the competent authorities, i.e. special institutions, which are three branches of government. In other words, it is impossible not to consider institutionalism as the main theoretical framework: it is the basic concept in this research.

### **Energy efficiency in practice: cases of Germany, Japan and Kazakhstan**

After the Second World War German and Japanese industry needed restoration. It required a lot of the state's actions, which was intended: to give impetus to mass production and catch up the other developed countries economically. XX century events in 70's, when the first energy crisis occurred (1973), revealed the weakness of the chosen direction. All the developed countries, that were highly dependent on oil imports, were knocked down by the sudden oil embargo. The life in these countries literally hardly stopped. Germany and Japan were not an exception. The oil embargo forced German and Japanese governments, Germany's Ministry for Economy/ Federal Ministry for Economic Affairs and Energy (BMWi) in Germany and the Ministry of International Trade and Industry (MITI)/ Ministry of Economy, Trade, and Industry (METI) in Japan, to call for reduction of energy dependency, alternative energy sources diversification, energy conservation. In 1976 German government adopted the Energy Conservation Act, which firstly required building insulation, i.e. «energy losses for heating and cooling» prevention» «in order to conserve energy.» Later in 1980 the Bundestag's Inquiry Commission on Future Nuclear Energy Policy made most of additions to the Act including «adopting rules for limits on specific fuel consumption in vehicles» and «speed limits on the autobahn.» The same shifts were typical for Japan where The Energy Conservation Act (law concerning the rational use of energy) was enacted in 1979. It set necessary measures for «the rational use of energy by factories, buildings, transport, machinery and equipment.» To

reach a positive impact on the environment German and Japanese Conservation acts were also aimed at CO<sub>2</sub> emissions reductions. The basic idea of energy efficiency measures have become even more widespread since the 1970s. As a result the 1973 oil crisis have set the agenda for Germany and Japan remaining the main part of German and Japanese energy policies and.

The energy efficiency policy in Kazakhstan is a result of the Soviet Union collapse when the former one had to form its own independent political course aimed at «integration with the world economy», however, existing energy industry was highly energy-intensive, which caused serious costs resulting Kazakhstani private sector reluctance to invest in it. Then the government took measures to reform the existing energy policy: in 1997 the law «On energy safety» dd. 25 December 1997 №210-1 was adopted. In the same year the Republic of Kazakhstan Cabinet prepared and the President announced his annual message to people of Kazakhstan, it is also referred to the «Strategy Kazakhstan-2030», which stated that Kazakhstan «must have strict control over its strategic resources, live frugally and thriftily use the funds». Thus, as well as Japan and Germany Kazakhstan emphasized the importance of energy efficiency policy, the agenda was set and the responsibility for its realization was allocated to the formal institutions.

### **Conclusion**

To distinguish differences and similarities between Kazakhstani, German and Japanese public policy process in order to reveal German and Japanese success in pursuing energy efficiency policy preconditions public policy cycle approach will be used. It allows to reconstruct the entire policy process onto small stages and follow them step by step in order to explore the goals, factors, affords and expectations that was input to receive certain outcomes: if the outcome reached the goals then the policy might be considered as successful. German and Japan has been achieving the main goal to reduce energy consumption. In order to take into account developed countries' experience it is necessary to follow all stages of their adaptation practice in the research.

Overall, in further research two theoretical approaches will be used: institutionalism is to identify the main political process «creators» and their role in it; and the policy cycle is to identify the main stages and trends in the political process in order to explore possible relevance of German and Japanese experience towards Kazakhstan.

### References

- 1 Absametova A. Energoeffektivnost kak element natsionalnoy energeticheskoy politiki Kazakhstana. Last modified 2013. [<http://www.kazenergy.com/kz/-2013/11356-2013-10-16-09-08-48.html>]
- 2 International Atomic Energy Agency. Energy indicators for sustainable development: guidelines and methodologies, 2005
- 3 Yehezkel Dror. Public Policy making reexamined. – Transaction Publishers, 1983.
- 4 Knill Ch., Tosun J. Public Policy: A New Introduction. – Palgrave Macmillan, 2012.
- 5 Birkland, Thomas A. An introduction to the policy process: theories, concepts and models of public policy making. United States: M.E. Sharpe, 2001
- 6 Models of public policy-making: Graduate Center for Public Policy and Administration materials of the Third Session. – Long Beach: California State University, 2002.
- 7 Cairney P. How Can Policy Theory Have an Impact on Policy Making? / Ed. Paul Cairney: Politics and Public Policy, last modified March 25, 2014 [<http://paulcairney.wordpress.com/2014/03/25/how-can-policy-theory-have-an-impact-on-policy-making/>]
- 8 Kubler D. Understanding policy change with the advocacy coalition framework: an application to Swiss drug policy // European Public Policy. – 2001. – Nr 8 (August 4).
- 9 Cairney P. Policy Concepts in 1000 Words: The Advocacy Coalition Framework / Paul Cairney: Politics and Public Policy. Last modified October 30, 2013 [<http://paulcairney.wordpress.com/2013/10/30/policy-concepts-in-1000-words-the-advocacy-coalition-framework/>]
- 10 Krugman P. R. Strategic Trade Policy and the New International Economics. The MIT Press, 1986.
- 11 Fukai Shigeko N. Japan's Energy policy // Current History 87. – 1988. – Nr. 528 (April 1988).
- 12 The oil crises lead to the first energy efficiency policies / Energy Transition. The Germany Energiewende. Last modified November 04, 2015 [<http://energytransition.de/?c=9>].
- 13 Shulga I. Reformirovaniye elektroenergetiki v Kazakhstane // EnergoRinok. Last modified 2004: [<http://www.e-m.ru/er/2004-07/22549/>].
- 14 The Republic of Kazakhstan's President Annual message to people of Kazakhstan dd. 1997, «Kazakhstan – 2030: Prosvetaniye, bezopasnost, I uluchsheniye blagosostoyaniya vseh kazakhstantsev», «dolgosrochniy prioritet 5: energeticheskiye resursi».
- 15 Lambrecht S. The Clean Energy Sector in Japan An Analysis on Investment and Industrial Cooperation Opportunities for EU SMEs. EU-Japan Centre for Industrial Cooperation: Minerva, February 2014. Cited in Agency for Natural Resources and Energy of Japan // Comprehensive Energy Statistics and Annual Report on National Accounts, 2012.