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Doctoral dissertation summary

**India's external energy policy of the Narendra Modi government (2014-2019)**

Field of study: social sciences

Discipline: public policy

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The doctoral dissertation concerns the Republic of India – a country which, due to its population size, economic potential and international importance, is an interesting and important object of scientific research. The further development of India is conditioned by access to energy resources from abroad. In order to function normally, India must import gigantic amounts of oil, natural gas and hard coal. India's basic need is to ensure the continuity of energy supplies, in the face of shortages of own resources. India has been importing energy sources from abroad for decades. Relatively recently, the country's decision-makers came to the conclusion that relying only on the purchase of ready-made energy resources on international markets does not guarantee either stability of supply or price stability. It was decided that for this purpose it would be safer and wiser to acquire deposits in other countries and take over the entire production chains from extraction, through transport, to the final transfer of raw materials to domestic refineries and power plants. As a result of the policy introduced at a large scale at the beginning of 21<sup>st</sup> century, Indian entities now own energy resources abroad comparable to their own resources.

In the research field of the doctoral dissertation there is one of the key elements of India's external activity, which is the external energy policy and its model and factors shaping it. The author's intention was to examine the correlation between the state of India's energy security and the actions taken by the authorities of this country and entities of the energy sector on the international arena. In other words, showing that the state of India's energy security forces the authorities of this country and entities in the energy sector to take certain actions on the international arena. Collectively, these activities are referred to in the dissertation as external energy policy. The main goal of the author was to examine according to which model this policy is conducted. The paper broadly defines the concept of external energy policy, discusses the difference between it and the narrower concept of foreign energy policy. The research concerns the period 2014–2019, i.e. the first term of the government of Prime Minister Narendra Modi from the Indian People's Party.<sup>1</sup>

The primary research issue of the dissertation is the assessment of the state of India's energy security. It was made despite full awareness of the complicated and difficult to measure research matter. It was preceded by a presentation of the genesis of the concept of energy security, the evolution of its understanding and a discussion of key definition problems. The assessment was based on a set of indicators selected as part of the author's review of energy security research methods contained in the article: *The concept of energy security – overall analysis approach*<sup>2</sup>. The selected indicators allowed to assess the state of India's energy security, pointed to the key weaknesses of the country's energy system. The assessment of the state of energy security was made taking into account internal and external factors.

In the category of internal factors, the study was carried out mainly using indicators classified in the literature as economic. It takes into account three approaches, namely

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<sup>1</sup>In India the party is called Bharatiya Janata Party (abbreviation BJP). The government led by Prime Minister Narendra Modi is called the NDA government, after the name of the National Democratic Alliance coalition, in which the leading party is the BJP. Due to the time frame adopted in the dissertation, this term refers only to the NDA coalition government, led by Prime Minister Modi in 2014-2019 and should not be confused with the previous governments of this coalition.

<sup>2</sup>T. Wiśniewski, *The concept of energy security – overall analysis approach*, in: B. Drelich-Skulska, A. Jankowiak, S. Mazurek (Eds.), *Redefinition of the Role of Asia-Pacific Region in the Global Economy*, Publishing House of Wrocław University of Economics, Wrocław 2014, p. 77-84.

macroeconomic, microeconomic and technical. The macroeconomic approach was introduced to demonstrate a balance between the demand and availability of individual energy sources. The situation in this respect was the basis for actions taken by the government administration and individual economic entities of the energy sector in order to secure the supply of energy sources, both on the internal market and in the international space. In microeconomic terms, a lot of attention was paid to the analysis of the ownership structure of the Indian energy market, in order to determine the share of state and private entities in the energy sector and the degree of penetration of the energy market by global economic entities. This analysis was also carried out in order to determine the level of internal and external competitiveness of the energy market and to identify factors distorting competitiveness, such as the functioning of monopolies and oligopolies. In technical terms, particular attention was paid to the efficiency and reliability of the energy system and the availability of energy for the final customer.

In the category of external factors, key aspects of energy security that are the result of external factors towards India were examined. In other words, those that are part of its international environment. The starting point for this research was the analysis of the international situation in terms of resource availability, market trends and the price level of energy raw materials and electric energy. The analysis was carried out in the belief that the situation on international markets of energy resources has a very large impact on the Indian energy sector. The core of the study of external factors was geostrategic analysis. It determined the level of energy self-sufficiency and import dependence of India, broken down by individual energy carriers, as well as the degree of diversification of transmission channels and suppliers of a given carrier. The issue of the stability of external energy supplies was also subject of analysis. To this end, the geopolitical situation of the main suppliers of energy sources was analyzed and reference was made to key factors that may disrupt supply. Factors such as the embargo on the export of energy resources, the risk of armed conflicts affecting or stopping exports, the risk of blocking the country's supply of energy resources and the risk of blocking the "bottlenecks" or so-called *chokepoints*, lying on the route of transport of energy resources, were taken into account. The ecological and institutional aspects of India's energy security were also examined. In ecological terms, reference was made to the issue of the carbon footprint of the energy sector and national and international commitments related to the protection of the natural environment, with particular reference to global climate negotiations. In institutional terms of energy security, the focus was on political and international commitments related directly or indirectly to energy, while emphasizing issues affecting the development of the Indian nuclear sector.

The culminating part of the dissertation is an analysis of the actions taken by the Indian authorities and energy companies in the international arena, in view of identified level of energy security and of the key elements of India's energy security deficit. The analysis looks at key decisions made by leaders in India's energy sector during the period under study. It takes into account the key transactions concluded during this period. Identifies repetitive patterns of behaving. The analysis of international activities is divided into the main actors of this activity, i.e. central authorities, state-owned enterprises and private entities. In the case of the administration's activities, key political initiatives, the most important international agreements concluded during this period were presented. The results of foreign visits by the Prime Minister and, in justified cases, also by the Minister of Foreign Affairs and by key economic ministers

were analyzed. For companies, key international projects implemented during the period considered were analyzed. On this basis, a number of conclusions have been formulated regarding the Indian pragmatics of functioning on the international arena in matters related to the energy sector. Conclusions that are likely to be extrapolated to a wider period than just the one covered by the investigation.

On the one hand, the choice of the subject of the dissertation is supported by substantive issues - India is one of the main economies of the world, and on the other hand, a gap in the scientific literature regarding the issues and scope of work and high application value. The focus observed in political and administrative science on the rivalry of the two powers of the US and China is far from sufficient to give the full context of the contemporary international order. The presentation of the Indian perspective of external policy in the constellation of the multi-field international order and its essential element, which is the energy security policy, is of paramount importance. The work fills in large analytical gaps in this area, occurring in Polish and international literature.

**The main thesis of the dissertation is that the fundamental goal of India's external policy in the field of energy is to reduce the energy security deficit by expanding into external markets based on the assumptions of the neoliberal school of international relations. India relies on international cooperation in the energy sector, despite the fact that it has been striving for self-sufficiency in this area for decades.**

The dissertation answers the three research questions set out below.

1. **How high is the level of India's energy security, i.e. what is the scale and structure of the country's energy security deficit?** With regard to the above question, **the research hypothesis was adopted that the level of India's energy security is still relatively low, despite a number of actions taken to improve the situation and despite the significant positive changes that occurred between 2014 and 2019.** The hypothesis was verified using a set of energy security indicators available in the literature selected by the author. The result of their analysis is also the identification of key risk elements threatening India's energy security.
2. **Is there a need for foreign expansion to ensure India's energy security?** In response to the above question, **the hypothesis was adopted that the Indian energy sector as a whole is not able to function independently, and thus must cooperate with foreign countries, but the level of energy self-sufficiency shows an upward trend.** The study using selected energy security indicators allowed to verify the above hypothesis and at the same time showed to what extent India's energy sector is dependent on foreign cooperation. It identified elements of the sector that operate relatively independently and those that are almost completely dependent on abroad. It outlined trends in the studied area.
3. **According to what model was India's external energy policy conducted?** With regard to this question, it has been hypothesized **that India's external policy is relatively best reflected in the neoliberal model.** Showing the model of India's foreign energy policy allows to better understand the behavior of the subjects of this policy on global markets, learn about their expectations, needs and the resulting strategies and directions of foreign expansion. It proves that after almost thirty years of gradual

liberalization of the Indian economy, large private economic entities have a huge impact on the shape and direction of India's external energy policy.

India's external energy policy has been analyzed on the basis of political science and administration, in particular the prevailing approaches to international relations, i.e. realistic, neorealistic, liberal and neoliberal approaches. The dissertation reviews mainstream thoughts about international relations in terms of their usefulness in the study of external energy policy. Taking into account a set of characteristics of the actions taken by Indian entities in the energy sector, it determines which of the models best characterizes their foreign expansion. Whenever the availability of resources allowed the empirical study of the relationship between energy security and external energy policy was carried out on the basis of Robert Putnam's two-level game model. Conceptual apparatus and methodology in the field of international relations were used for the research. This uses the traditional approach that "international relations are a political discipline *par excellence*; they are a part, a subdiscipline of the science of politics."<sup>3</sup>

The analysis was prepared on the basis of Indian and international statistical data available in public circulation and on professional literature. The main research method of India's external energy policy was the analysis of documents and official reports created by the Indian central institutions – the Ministry of Oil and Gas, the Ministry of Trade and Industry, the Ministry of Coal, the Ministry of Renewable Energy, the Ministry of Electricity, the Ministry of Foreign Affairs, the think tank NITI Aayog and the Ministry of Statistics. Studies of non-governmental research centers, both domestic and foreign, were also used. The analysis included public statements of key people in the country, positions of official international bodies and materials published after international meetings and visits, in particular of Prime Minister Modi, and in justified cases also of Minister of Foreign Affairs and Ministers of Coal, Oil and Gas, New and Renewable Energy and Electricity. The subject of the analysis were also program documents and signed international agreements in the energy sector. A separate, extremely important group of source materials have become reports and information published by the main economic entities of the Indian energy sector, as well as public statements of representatives of their management bodies. The knowledge contained in them was confronted with publicly available reports of industry organizations, consulting companies and press materials, primarily published on the portals of the main English-language mass media in India, and the global news agencies. In order to confirm the credibility of mass media information, each time they were cross-checked by comparing several sources.

The analysis was supplemented by materials collected during the author's semi-open interviews with Indian experts representing Indian scientific community and public and private business as well as by guidance of Polish scientists and diplomats specializing in international relations, Indology or in energy security issues.

The structure of the dissertation corresponds to the general objective, which is to verify the main thesis and to answer the research questions posed. The dissertation consists of an introduction, four chapters, a summary and conclusions, and a bibliography. Each of the chapters has a separate introduction and summary.

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<sup>3</sup>R. Kuźniar, *Stosunki międzynarodowe - istota, uwarunkowania, badanie (International Relations – the Essence, Conditioning, Studying)* in: E. Halizak i R. Kuźniar (Eds.), *Stosunki międzynarodowe - geneza, struktura, dynamika*, Wydawnictwo Uniwersytetu Warszawskiego, Warszawa 2006, p. 30.

The first chapter entitled *Energy Security and External Energy Policy – Definitions, Theory and Research Methods* was devoted to theoretical considerations concerning energy security and external energy policy. This chapter critically reviews the available theoretical perspectives in the subdiscipline of international relations, in terms of their suitability for the study of energy security and external energy policy. It makes a preliminary assessment of which theoretical perspective best suits to explore India's external energy policy. The chapter also describes the issue of the subject of external policy in the understanding of the main theories of international relations. It was decided on theoretical grounds which groups of entities in the energy sector should be taken into account in further research. The key concepts appearing in the dissertation are defined, in particular the concept of external energy policy and energy security. In the latter case, the genesis of the concept and its dissemination in literature and the moment of inclusion in the internal Indian discourse were also presented. The issue of energy security research, in particular the issue of measurability of its level, was extensively presented, and the possibility of using a two-level game model to study India's external energy policy was discussed.

The second chapter of the dissertation, entitled *The level of energy security of India*, presents the results of research on the state of India's energy security in internal terms, carried out using the following indicators: the structure of the national energy balance, the national reserves of energy resources (broken down into: oil, natural gas, coal, uranium and the potential for the development of renewable energy), the level of energy resources stocks and the level of prices of energy raw materials, electricity and fuels. These indicators are conventionally classified into the group of macroeconomic indicators. This chapter also analyses the ownership structure of the national energy market and assesses the level of competitiveness of the energy market and its impact on the level of energy security. The governance model of the Indian energy sector was also looked at and energy market players were selected for further in-depth research. The level of energy security was also assessed using technical indicators, such as efficiency and reliability of the system of extracting own energy sources and their transport to power plants and refineries, the reliability of the system of generation, transport and distribution of electricity, the availability of electricity for the final customer and the ratio of electricity and fuel prices to income. This chapter answers the question of what is the state of India's energy security and what are the key weaknesses of the country's energy system.

The third chapter of the dissertation, entitled: *The External Dimension of India's Energy Security*, presents the results of research on the state of India's energy security in external terms. The research was carried out using the following macroeconomic indicators: the global reserves of energy resources (broken down into: oil, natural gas, coal, uranium and the potential for the development of renewable sources of energy), demand and supply trends on the global energy market, the price level of energy raw materials. The external assessment of energy security was also carried out using geostrategic indicators, including the share of imported energy fuels in the energy balance, the degree of diversification of suppliers of a given energy carrier and the degree of diversification of energy transmission channels and the stability of energy raw materials supply based on the analysis of the main markets for the supply of energy sources. The ecological and institutional dimension of India's energy security was also presented. The chapter answers the question if the Indian energy sector is able to function independently.

The fourth chapter, entitled *The Model of India's External Energy Policy*, presents the results of research on India's external energy policy. The analysis of international activity is presented in a division into the main actors of this activity, i.e. central authorities and state-owned enterprises as well as private entities. In terms of the subject, the analysis concerns activities aimed at institutionalizing relations with external suppliers of energy sources, i.e. international agreements, contracts for the supply of raw materials, mining concessions and contracts for the purchase and sale of foreign deposits or energy sector entities. The analysis also included domestic legislative and non-legislative activities aimed at relations with foreign business entities of the energy sector. In terms of territory, the subject of analysis is India's relations in the energy sector with world powers, i.e. the United States, Russian Federation, China and the European Union, with its main suppliers of energy resources, i.e. with Iraq, Qatar and Indonesia, and with its immediate neighbors, i.e. Pakistan, Sri Lanka, Nepal, Bhutan, Bangladesh and Myanmar<sup>4</sup>.

The general findings of the dissertation confirm the main research hypotheses. For the purposes of the dissertation, it was assumed that energy security is "a state of no threat to the availability of affordable energy from various sources, meeting appropriate quality and ecological parameters". Studies of internal energy security indicators have shown that the system of domestic extraction of energy resources in India has not yet reached a level that guarantees meeting the demand of the domestic market. This applies to all fossil energy sources. India is struggling with a deficit of its own oil resources, which with the current production is enough for only a dozen or so years. Natural gas resources are also modest. Coal resources are huge and even in the long term there are no fears of their depletion, but their quality remains a problem. Another weakness of the energy system is the incomplete process of building strategic reserves - the Indian authorities have relatively recently introduced a policy of maintaining the state's strategic reserves of crude oil and petroleum products. It is difficult to talk about the availability of affordable energy, in a situation where the level of fuel and electricity prices is close to the average world prices, and the incomes of a large part of the population remain at a very low level. In addition, in the case of India, the problem is the unfavorable balance of primary energy, based mainly on two fossil fuels, i.e. coal and oil, and on the category of "biofuels and waste", under which traditional biomass is primarily hidden. The weakness of the Indian energy system is the very high share of coal in electricity production and the fact that between 2014 and 2019 the additional electricity generated in response to growing demand also came mainly from coal. Although the installed capacity of power plants based on renewable energy sources was growing, until 2019 this did not translate into an adequate increase in the share of these sources in electricity generation. The use of coal is gradually growing – in 2019 it reached the level of about 1 billion tons per year. Moreover meeting the quality criterion of the energy supplied remains problematic in India. The combination of coal, oil and traditional biomass means that Indian cities already have some of the worst indicators of air pollution in the world, while at the same time greenhouse gas emissions into the atmosphere are gradually increasing. Therefore, the Indian energy system does not meet the ecological parameters contained in the definition. In general the above list

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<sup>4</sup> Due to the small scale of the Maldives' economy, little space has been devoted to relations with the country.

confirms the assumed hypothesis about the existence of an energy security deficit in India. It also points to its key elements.

When estimating the level of energy security deficit, however, it should be kept in mind that a slightly different formulation of the definition of energy security may significantly modify the final assessment of its level. During the period covered by the study, the Indian administration approached the issue of energy security differently than in the definition adopted in the dissertation.

Regardless of the definition adopted, some of the tested indicators of energy security pointed to an increase in its level during the period covered by the study. Firstly, the amount of primary energy has been significantly increased. Secondly, huge progress has been made in terms of universal electrification of the country. Thirdly, the amount of electricity produced was significantly increased, which translated into the above-mentioned access to energy, shortened interruptions in its supply and eliminated the limitations on the amount of energy supplied to end users. After years of shortages, India's power system has reached overpower and has begun to provide enough energy. Fourthly, through changes in the energy balance, the level of energy self-sufficiency of the state in the field of power generation has been increased. Fifthly, great progress has been made in building the capacity of energy using renewable energy sources. Sixthly, the relatively market model of the energy system has been established, in which private and state-owned enterprises coexist, responsible to an equal extent for electricity generation and oil and gas production. Seventhly, the Indian authorities have largely carried out socially painful reforms of pricing policy aimed at marketizing fuel and electricity prices, and thanks to this, both state and private energy companies have the conditions for development and profit generation. The above list proves that the second part of the first research hypothesis saying that significant positive changes occurred between 2014 and 2019 was right.

The study of external aspects of energy security allowed to essentially confirm the second hypothesis that the Indian energy sector as a whole is not able to function independently, and thus must cooperate with foreign countries. It should be noted, however, that its last element saying that the level of energy self-sufficiency shows an increasing trend turned out to be true only in the case of the electricity sector. At the same time, the study showed the extent to which India's energy sector is dependent on international cooperation. It has isolated those elements of the international environment that pose a threat to energy security, as well as those that affect the increase of its level. It demonstrated the external conditions under which energy policy was conducted under Prime Minister Narendra Modi between 2014 and 2019. It distinguished the elements of the international situation favorable to this government from those that hindered its operation.

The key elements of the structure of the energy security deficit in external terms include a fairly high overall import dependence, especially burdensome in the case of oil, a low degree of diversification of onshore transmission channels (transport routes) of energy resources, risks associated with dependence on maritime transport, including in particular the need to use the straits of Hormuz and Malacca, the negative effects of the Arab Spring, including the civil war in Syria. India was also losing out on Venezuela's socio-political instability, the division of Sudan and the tightening of the sanctions policy towards Iran that occurred at the end of the period covered by the study. On the other hand, the elements positively influencing the level of energy security included a high level of global energy resources and sufficient resources held



by key existing Indian suppliers, high flexibility in the selection of suppliers of energy raw materials, thanks to the use of mainly maritime transport, an increase in the supply of oil and gas on global markets during the period under consideration and the related decrease in prices, the removal of international administrative barriers that blocked the development of Indian nuclear power in earlier years, as well as global climate negotiations in the part in which they contributed to the spread of renewable energy.

Studies of external energy policy have identified its main actors, main objectives, directions and achievements. They demonstrated the extremely important role and great commitment of the central authorities, with the Prime Minister and the Ministers of Oil and Gas, Electricity, Coal and Renewable Energy at the forefront. At the same time, they demonstrated how state and private energy companies operate on foreign markets. They showed the patterns of activities and their main areas. The intention of the researcher was to show that the defined areas of energy security deficit had a direct impact on Indian activity on the international arena. Showing the correlation between the state of energy security and external energy policy was crucial to confirm the thesis of the main dissertation, according to which the fundamental goal of India's external policy in the field of energy is to reduce the energy security deficit by expanding into external markets based on the assumptions of the neoliberal school of international relations.

When Narendra Modi took over the reins of government, the basic element of the structure of the energy security deficit was the lack of universal access to electricity, which affected about 300 million Indian citizens at that time. The situation was aggravated by frequent interruptions and restrictions in the power supply. This generated an urgent need to increase the supply of electricity on the domestic market and to expand its distribution network. The Indian government has pledged to ensure universal and uninterrupted access to electricity by 2022. The implementation of this commitment required primarily internal action, but also generated extensive international action. It was assumed that a large part of the additional energy would be renewable energy. The Government announced that 175 GW (in the later version 225 GW) of installed capacity from renewable sources would be achieved, including 100 GW from solar energy by 2022<sup>5</sup>. It was considered that developed countries should help achieve these objectives. Already during the first meeting with the then American President Barack Obama, Prime Minister N. Modi sought the transfer of American technologies in the field of renewable energy and financial support for the dissemination of their use in India. The topic was also present in the dialogue with the EU. The main expectation for the West was the transfer of technology and financing the construction of new installations based on renewable energy sources.

The security deficit associated with inadequate electricity supply was also an inspiration for arrangements with Russian Federation, primarily regarding the country's participation in the development of India's nuclear sector. The development of India's nuclear power plants was also a subject of dialogue with the US, however India's priority with this country was to prevent the return of any restrictions on cooperation between its nuclear energy sector and countries with nuclear technologies and nuclear fuel.

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<sup>5</sup> International Energy Agency, *India 2020 – Energy Policy Review*, IEA Publications, Paris 2020, <https://www.iea.org/reports/india-2020> (accessed: 30.06.2020), p. 33.

In the pursuit of universal electrification of the country, in parallel, emphasis was placed on increasing the generation of electricity from coal. To this end, the domestic production of this energy raw material was successively increased. At the same time, the amount of imported coal was increased by tens of millions of tons per year<sup>6</sup>. Efforts were also made to improve the process of generating energy from this source. Foreign investors were allowed to operate in the energy sector, including the construction of coal-fired power plants.

The second basic element of India's energy security deficit structure was import dependence. In this situation, the priority of the external energy policy was to ensure uninterrupted supplies of energy resources from abroad and to diversify the suppliers of these raw materials. To this end, Prime Minister Modi undertook a wide-ranging diplomatic offensive by visiting existing and potential suppliers. India benefited from its position as the second largest importer in Asia and exploited competition between suppliers. It sought to reduce import dependence on West Asia and to diversify import sources based on new destinations in Africa, South America, the USA and Canada. There have been significant changes at the top of the list of major oil suppliers. The directions of natural gas supplies have been significantly diversified as well.

A further element of the structure of the energy security deficit, which results from import dependence, is susceptibility to fluctuations in the prices of energy resources on global markets. Hence another extremely important element of activity on the international arena, which are investments in foreign deposits of oil, natural gas and coal. During the study period, Indian energy companies gained additional strength and experience in the global market. They became very strong players at the international arena. The cumulative value of foreign investment has increased. The role of subsidiaries of state-owned energy companies set up to acquire foreign assets has strengthened. The main one, OVL, has outgrown its founder, ONGC, in terms of the amount of energy resources extracted. Activities on the markets of third countries took the form of foreign direct investment, or indirect investment, carried out by subsidiaries located in other countries.

Among the dozens of state-owned energy sector entities, three major Indian fuel companies, namely Oil India Limited, Indian Oil Corporation Limited and Bharat Petro Resources Limited, played a particularly important role in terms of investment during the research period. Together they made two key investments in foreign energy assets. They purchased a 29.9% stake in the Russian-registered mining company LLC Taas-Yuryakh Neftegazodobycha, a subsidiary of Rosneft, which owns and operates the Srednebotuobinskoye oil and gas field in the southwestern part of Yakutia, in eastern Siberia. In the second project, they appeared together with OVL, a subsidiary of the ONGC group. Together, they purchased a 49.9% stake in the Russian company CSJC Vankorneft, which owns a large Vankor oil and gas field in Krasnoyarsk Krai in eastern Siberia known as one of the pearls of Russia's Rosneft. Among private companies, an important role in the international arena was played by the electricity producer, Adani Power, which began an investment in the construction of a coal mine in Australia, in order to expand its foreign raw material base.<sup>7</sup>

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<sup>6</sup> Government of India, National Statistical Office, *Energy Statistics 2020*, NSO, New Delhi 2020, edition 27, p. 41.

<sup>7</sup> D. Keohane, J. Farchy, *Rosneft sells 15 per cent stake in Vankor to India's ONGC*, "Financial Times" 2015, <https://www.ft.com/content/0d4e50b8-52ee-11e5-8642-453585f2cfcf> (accessed: 22.05.2021).

Ensuring access to modern technologies was a priority of external energy policy not only in the context of renewable energy sources. For example, Reliance Industries Ltd. has partnered with the transnational corporation BP to extract hydrocarbons and retail petroleum products. The import of the technology also contributed to the groundbreaking decision to allow foreign investors to commercial coal mining in India in 2019. Previously, foreign companies could only mine for their own use as part of the so-called "captive mining", i.e. only if the mining activity was complementary to the core activity, such as the production of energy, steel or cement.<sup>8</sup> The technological deficit of the energy sector additionally encouraged entities in this sector to invest abroad, especially in already operating mining or energy entities, because the purchase of such enterprises is usually a quick and effective way to acquire the technologies they use. Access to technology has been particularly important in the nuclear power sector, which has struggled with international isolation for decades. During the period in question, the Indian government actively cooperated with the International Atomic Energy Agency in the framework of the 2009 agreement on safety standards in civilian nuclear power plants, which provides for the provision of nuclear installations for inspection by this agency. It also lobbied for India to join the Nuclear Suppliers Group. In addition, in order to meet the expectations of international suppliers of nuclear technology, in 2016 it led to the ratification by India of the IAEA Convention on Compensation for Nuclear Damage.

Some entities in the energy sector sought financial support abroad. Private companies were particularly active in this respect. For example, the Indian energy business house Adani Power Ltd signed an agreement with China Development Bank to finance the expansion of a coal-fired power plant in Mundra, Gujarat. Financial support was also sought by the second important energy business house, Essar Energy Holdings Limited, which first obtained financing from the Russian Vneshtorgbank in the amount of USD 1 billion, and then sold in 2017 to Rosneft and its partners its refinery division. The purchase costed \$12.9 billion and was the largest acquisition of an Indian company by a foreign company in history. The NDA government supported domestic business in obtaining financing abroad.

During the period considered, India supplied electricity to Nepal, Bangladesh and Myanmar. It invested in Bhutan's energy sector. It supplied fuel to Sri Lanka, Nepal, Bhutan, Bangladesh, Myanmar and the Maldives. Thus, it built a system of asymmetric interdependence towards most of its neighbors in the sense proposed by R. Keohane and J. Nye. The key driving force behind activities within the energy sector were three factors: strengthening India's position as a regional power, building a network of connections and dependencies with neighbors, and achieving economic profits.

Research on external energy policy has also made it possible to answer a key research question, namely according to which model is this policy conducted? The hypothesis that India's external policy is relatively best reflected in the neoliberal model has been confirmed on the basis of the arguments presented below.

A review of mainstream theories of international relations in terms of their usefulness for the study of India's external energy policy concluded that neoliberalism is relatively the most accurate and close to Indian reality, since this approach recognizes the multi-subjectivity

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<sup>8</sup> S. Shukla, M.N. Quadri, *India: Coal Mining Sector, Road To De-Nationalization*, "Mondaq" 2020, <https://www.mondaq.com/india/mining/933746/coal-mining-sector-road-to-de-nationalisation> (accessed: 06.02.2022).

of international relations and, in contrast to classical realism and neorealism, focuses its research interests on international economic cooperation. It broadens the area of interest of international relations sciences with new elements, including the issue of energy security, central to this dissertation. It pays due attention to international institutions, including those that form the basis of the global energy system. It introduces into the theory of international relations the concept of asymmetric and complex dependence, which perfectly match the description of phenomena occurring in the international trade in energy resources.

The research has confirmed that the Indian energy market is only a seemingly centrally managed regulated market, with a dominant role for the public sector. In fact, it is a complicated mixed system, allowing the functioning of both state and private entities, both domestic and foreign, giving these entities a relatively large dose of freedom. What appears to be the policy pursued by the central government is in fact the result of a game of interests between different actors in the energy sector.

In India, a relatively marketable model of the energy system was built. Private and public enterprises are more or less equally responsible for electricity generation and oil and gas production. Relatively the most competitive is the renewable energy sector, in which state-owned enterprises give way to private entities. The competitiveness of the oil and gas sector, which consists of a number of private and public entities, has been preserved. This applies primarily to the processing of crude oil and the distribution of petroleum products, while state-owned companies continue to play a major role in exploration and production. Competition on the electricity production market is partially distorted by preferential access of state producers to coal extracted by state-owned companies, which in 90% monopolize the market for the extraction of this energy carrier. Nuclear energy remains entirely in the hands of the state.

Ownership structure has a direct impact on the way the energy sector is managed and therefore also on the way external energy policy is conducted. It was considered that the mixed ownership structure indicates a neoliberal model rather than a neorealistic one. The neoliberal model characterizes mainly the oil segment, electricity generation in a conventional way and from renewable sources. In the nuclear power industry, the neorealistic or even realistic model has been preserved. In the field of hydropower, steps are being taken towards liberalization, although the neorealistic model still describes the sector better.

In the period under review, external energy policy was conducted in peaceful conditions, without the use of military force, while maintaining the rules of free trade, and its key driver was the need to ensure the country's energy security and the pursuit of economic profits. In international energy markets, Indian entities have sought attractive commercial or investment options and sought to use them, either alone, in cooperation with other Indian entities, or jointly with transnational corporations or state-owned enterprises from other countries. They took advantage of the opportunities created by changes in the geopolitical environment, usually without using coercion to shape it.

Despite the high level of state involvement, it cannot be said that external energy policy was conducted in a centrally controlled manner. The Indian state plays an important role in this policy, but it is not a monopolistic role. External energy policy consists of hundreds of individual business decisions, the main goal of which is economic profit. They gather into one, relatively coherent whole, but not all of them are undertaken by the state authorities. In the case of private enterprises, the state primarily has a supporting role, not a dominant and subjective

one. Multi-subjectivity in decision-making is a factor indicating the predominance of the neoliberal model.

The last argument in favor of choosing the neoliberal model is the approach to foreign entities. For decades, Indian legislation has been constructed in a way that significantly restricts or even prevents foreign entities from operating in India, but since the early 90s. this began to change gradually. The Narendra Modi administration continued this trend and even slightly accelerated the opening of the economy to cooperation with foreign countries.