How do Southeast Asian countries participate in the development of the Arctic

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Abstract. The Arctic has been of particular importance for a lot of countries, but circumpolar states, including Southeast Asia states, for many years. For Southeast Asia state it is very useful to take part in the Arctic development because they get the opportunity to sell their technologies and use their research results. The feature of Southeast Asia states policy is the intention to sell their equipment and to help to provide the region with the appropriate infrastructure. Thus, the economic interests are of the great importance in the cooperation with circumpolar states. For circumpolar states this cooperation is also very important because they may extend their opportunities in the region due to acquiring of the essential technologies.

Keywords: Arctic, Singapore, Vietnam, Philippines, oil, natural gas.

1. Introduction

The Arctic is one of the extremely important regions from the angle of economic, geopolitics and ecology. In recent years the region is attractive not only for the circumpolar states but also for countries that are far away from the North Pole. The Arctic policy is of particular importance in the national strategies of Asian states because of their steadily increasing economic, military, scientific and technical facilities and consolidation of political power. Nowadays the Arctic is attractive for both Northeast and Southeast Asian states – the latter are becoming increasingly active in the development of the Arctic. The development of the Arctic is significant in terms of both state security [1] and economic benefits [2]. Countries can benefit not only by prospection [3] but also by selling equipment and assistance in the creation and operation of this equipment [4]. Such kind of interoperation is proper for the states of Southeast Asia which due to their remote location don’t pay much attention for political and military opportunities but seek after deriving benefit and sell their technologies. However, how significant is the Arctic for Southeast Asian states and are they seriously going to strengthen their positions in the economic development of the region?

There are different ways of the development: some spaces can be developed (land, sea) in terms of production [5] through using circular economy [6]; some living spaces can be developed according to the basics of sustainable development [7] and preserving territories for the future generations [8]. Cultural development of the Arctic region also plays a significant role [9]. Nowadays researchers, politicians and indigenous people of the North actively discuss which form of the Arctic development are optimal [10], possible [11] and essential.
Hydrocarbon extraction is one of the most popular activity in the polar region. According to geologists’ estimation there are about 13% of unexplored oil resources and 30% of unexplored gas resources [12], what makes the Arctic states enthusiastic to research and develop the region. Nevertheless, severe climate exacerbates the exploration of hydrocarbons and requires high-powered equipment adjusted for such weather conditions [13] and for different drilling methods [14]. The same problem is relevant for offshore drilling rigs where it is essential to provide safe and ecological hydrocarbons storage and comfort accommodation for the staff. According to the international law only circumpolar states are eligible for economic development of the Arctic resource [15], but not all of them are qualified enough to work up necessary equipment. The same is relevant for the spreading of hydroelectric power interesting for some members of the Arctic Council (AC) [16]. A lot of states in Southeast Asia are famous for production of high-tech technologies, development of innovations, environmental-friendly technologies and have experience in offshore drilling in their region. For them it is a great opportunity to realize their facilities and establish their presence in the Arctic despite the remote location from it [17].

2. Results

One of the most active Southeast Asian states in the Arctic is Singapore. Singapore seeks after both economic and political cooperation. In 2013, Singapore became an observer state in the Arctic Council, nonetheless, its position in the organization is better than others have – its representatives are engaged to the work of many committees. Despite the fact that Singapore still doesn’t have its own Arctic policy the country is conducting determined and comprehensive policy in the region. Besides economic profit Singapore as an island is interested in the climate observation in the polar region, global warming and rising of sea level is of particular importance, it poses a threat for the country because the land might be flooded [18]. The National Climate Change Secretariat was established for studying this question. Threat concerning global warming and features of the Arctic nature are objects for a lot of Singapore’s universities (National University of Singapore, Nanyang Technological University, Singapore Maritime Academy) in conducting research by their own and in cooperation with research centers and universities of the circumpolar states (Norway, the USA). Singapore is the place where a lot of international conferences dedicated to climate issues and polar researches are held (The Polar Circle, The Arctic Boarders, Smart Arctic, International Arctic Forum) and Singapore is also a participant of such events. Moreover, Singapore allocates great amount of money for climate observation annually: in 2019, more than 10 million Singapore dollars was aimed at the studying of rising of sea [19]. As part of its policy of the environmental protection in the Arctic region, Singapore promotes the widespread use of alternative energy sources here as well as making all equipment for operation in the Arctic as environmental-friendly as possible. In addition, Singapore is also a well-known protector of the indigenous and small-numbered people’s rights, it promotes discussion of their living conditions, traditions and identity preservation at the international level [20], and offers them special training programs at its national universities, what strengthens the country’s position of soft power [21].

In terms of economy there are two fields significant for Singapore: sale of prospection and drilling equipment and shipping. Shipping is essential for Singapore – it is one of the greatest world sea hubs and it earns a significant part of income by transportation, serving vessels and terminals and selling devices for that. Sea branch accounts 1/10 part of Singapore’s GDP [22]. Northern transport routes have historically played an important role in the delivery of goods [23]. And today their use is becoming even more relevant. Using of the Northern Sea Route (the NSR) may become possible soon due to ice is melting in the Arctic [24], that may severely reduce volume of vessels passing through the Malacca Strait and, therefore, reduce the income of Singapore. The Northern Sea Route is extremely important for many states, it may become a new route connecting Europe and Asia and can reduce traffic of the current route by at least 30%, besides, cargo shipping via the NSR should reduce delivery time by 5-10 days [25]. Singapore’s concerns are reasonable and obvious. To compensate losses related to the development of the NSR Singapore offers its technologies for this development
and maintenance of the route, including the creation of port infrastructure according to the environmental requests. Singapore is one of the few countries in the world capable of producing and serving icebreakers which it is planning to use in the Arctic by itself or lease to other countries. By the way, it might undermine Russian monopoly on escorting vessels in the Arctic Ocean. This includes the construction of two icebreakers for the Russian company Lukoil by Singapore’s Keppel Singmarine in 2008, which are using at the Varandeyeskyoye field in the Barents Sea [26]. In 2015, the same company sold 3 mini-icebreakers to Lukoil for operation in the north of the Caspian Sea at one of the largest fields [27]. Recently Singapore’s Semcorp Marine has constructed for Norway an oil production and storage vessel, adjusted to harsh weather, to operate at the Johan Castberg field in the Barents Sea [28].

As for icebreakers, not only the experience of production but of serving in of particular important, it makes Singapore an essential participant of the NSR development. special role is played not only by the production of icebreakers, but also by the experience of their maintenance, which also increases the importance of Singapore in the development of the NSR. Singapore repeatedly offers assistance in the shipping service in the polar region and also seeks after taking an active part in the development of Law of the Sea for the Arctic, emphasizing its wide experience in this area, last but not the least are concerns about its own profit. Despite Singapore's peaceful and friendly attitude, its increasing interest in the NSR makes some countries, planning to make the most out of the exploitation of the Northern Sea Route – Russia and China, concerned about possible competition [29].

Indeed, the sale of technologies is highly significant for Singapore due to the fact that high technologies are one of the main export items. Location and neighborhood with oil-producing countries have determined Singapore’s experience in offshore drilling, its innovations and scientific solutions have helped to adjust its equipment to harsh and complicated conditions of work in the Arctic. Singapore accounts about 70% of the world drilling rig production, moreover, Singapore’s company Keppel Fels is one of the biggest producers of offshore drilling systems [30]. Equipment made in Singapore is used all over the world, including the Arctic. Russia is a frequent and particular buyer. Russia has the biggest territories in the Arctic and has to develop it, nevertheless, its facilities don’t allow to achieve this goal successfully. China has declared that it is ready to help Russia in this field but it just pursue its own interests – to establish and strengthen its presence in the Arctic and get the same rights in the development of the region as the circumpolar states have – Russia don’t welcome this aspirations and is looking for other partners. Besides icebreakers that were already mentioned, Singapore’s company Pavilion Energy has established partnership with Russian corporation Novatek for collaborative work on the project Arctic LNG 2 in the field of natural gas extraction and liquified natural gas production. However, Singapore doesn’t cooperate only with Russia but also with other Arctic states. For instance, in 2012, the contract with American company ConocoPhilipps on construction of the innovative ice-worthy jack-up rig for the Arctic offshore was signed.

Nevertheless, Singapore is not the only state in Southeast Asia taking part in the development of the polar region but is still doesn’t have equal competitor in the intension of activity. Vietnam also shows interest in the development of the Arctic mostly because of the energy resources which are necessary for emerging Vietnamese industry. Russia is a key partner for Vietnam. Vietnamese concerns about access to hydrocarbons fields had been inspired by political crisis in relations between Russia and Europe that let Asian stated to enter Russian oil market. First attempt to establish partnership in this field were undertaken in 2010s. Vietnam tried to cooperate with Russian company JSC Zarubezhneft which prior to this had bought the entire shares of another company Arcticmorneftegazrazvedka and become eligible to offshore oil production. Vietnam faced the restrictions of Russian law, which could not be amended because of Rosneft and Gazprom objections which concerned to lose their exceptional positions in the market. Cooperation with Vietnam remained uncompleted. Nevertheless, Rosneft by itself showed interest to cooperate with Vietnamese companies. In 2014, the contract with PetroVietnam on collaborative development of the fields in the Pechora Sea was signed. A little bit later CEO of Rosneft Igor Sechin delayed the cooperation with
Vietnamese partners and stopped negotiations. Moreover, Rosneft postponed the development of Dolginskoye field in the Pechora Sea where PietroVietnam was supposed to take part until 2031. However, there are some successful projects of cooperation. A joint venture called RusVietPetro were created by JSC Zarubezhneft and PetroVietnam, this company is developing an oil reservoir in Central-Khoreyverskoye uplift (Nenets autonomous region). In 2015, CEOs of PietroVietnam and Gazprom signed an agreement on the conditions of collaborative development of Severo-Purovskoye field (Yamalo-Nenets autonomous region). Furthermore, its subsidiary company Gazprom Neft signed an agreement on expansion of cooperation in the field of oil and gas extraction and the Pechora Sea offshore drilling with PetroVietnam. Also, Gazprom Neft submitted conditions of buying a part of Vietnamese refinery factory Dung Quat shares, it will cost about 2,5-2,7 million dollars [31].

Arctic attracts Vietnam not only by oil but also by fishery. However, its aspirations face the restrictions of the international law, carefully protected by the circumpolar states. In recent years intention of the non-Arctic states to be engaged in the Arctic fishery has become more resolute what determined appearance of negotiations on this subject. As a result, the circumpolar states, EU, China, the Republic of Korea and Japan decided to expand rights of other states in the Arctic fishery what has given Vietnam opportunities in this field [32].

It might be a surprise, but the Philippines are attracted the Arctic too. The Philippines is a young and promising producer of high technologies. Although now it has the only project in the Arctic, the scale is quite impressive. In 2014, Philippines’ industrial process outsourcing firm The Atlantic Gulf & Pacific Company (AG&P) was awarded to a major contract to supply critical process modules for Yamal LNG in Yuzhno-Tambeyskoye gas condensate field [33]. Yamal LNG is a titanic project, distinguished by its scale, capacity, complex infrastructure and international participation. Part of shares belongs to the Silk Road Fund (China) and to the China National Petroleum Corporation (CNPC), American corporations and Chinese government have also invested in the project. The venture operates natural gas extraction, its liquefying, storage and shipping. The venture has its own transport infrastructure – Sabetta port and airport. The project is really impressive, Philippines’ participation help both sides to benefit, furthermore, Philippines’ equipment is used in the venture which is quite important for all states in the world due to the fact that liquified natural gas is used almost everywhere.

Malaysia and Indonesia participation in the Arctic development is quite modest. Both countries pay little attention to the Arctic matters. By the way. Singapore’s activity and diplomacy has motivated them to contribute the development of the region. Malaysia and Indonesia have supported Singapore’s program of promotion academic exchange and provide grants and scholarship to the North indigenous and small-numbered people and have established such programs in some of their universities [34].

To sum up the information stated in the paper through the synthetize method, we have made the following table which let estimate extent of Southeast Asian states involvement in the Arctic projects (table 1).

| The project                                           | Countries       | Corporations                                 | Budget                        | Terms      |
|-------------------------------------------------------|-----------------|----------------------------------------------|-------------------------------|------------|
| Construction of icebreakers for operation at Varandeykoye field | Russia, Singapore | Lukoil, Keppel Offshore & Marine | Tugboat Toboi – 72 million dollars; Icebreaker Varandey – 102 million dollars [33] | 2008       |
| Construction of                                       | Norway,         | Equinor, Sembcorp                           | 490 million dollars           | 2017-2020  |
| Project Description                                                                 | Country                | Company/Partner                      | Financial Details                                                                 | Notes                                                                 |
|-----------------------------------------------------------------------------------|------------------------|--------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------|
| Collaborative work on the project Arctic LNG 2 in the field of natural gas extraction and liquified natural gas production | Russia, Singapore      | Novatek, Pavilion Energy             | The number of shares hasn’t been stated yet [39]                                  | In 2018, MoU was signed but the final decision hasn’t been made yet¹ |
| Designation of innovative ice-worthy jack-up rig for the Arctic offshore           | The USA, Singapore     | ConocoPhillips, Keppel Offshore & Marine | 210 million dollars [40]                                                           | 2013                                                                |
| Development of the fields in the Pechora Sea                                       | Russia, Vietnam        | Rosneft, PetroVietnam                | 1,5 billion dollars [41]                                                           | Until 2031                                                          |
| Development of an oil reservoir in Central-Khoreyverskoye uplift                   | Russia, Vietnam        | Zarubezhneft, PetroVietnam           | 18 billion rubles [42]                                                            | Started in 2010                                                     |
| Development of Severo-Purovskoye field                                              | Russia, Vietnam        | Gazprom, PetroVietnam                | 69,2 million rubles [43]                                                          | The agreement was signed in 2015                                    |
| Supply critical process modules for Yamal LNG                                        | Russia, the Philippines | Novatek, The Atlantic Gulf & Pacific Company | Not declared, approximately 1-1.5 billion dollars по схожему according to the similar deal with China [44] | 2014                                                                |

### 3. Conclusion

Increasingly growing potential of Southeast Asian states and increasingly strengthening significance of the Arctic make the former be resolute and active. It’s visible that these states are seeking not after political and security goals but for economic ones – it is related to their economic and industrial

¹Сингапурская Pavilion Energy намерена стать участником "Арктик СПГ-2" Режим доступа: [https://1prime.ru/energy/20181113/829433052.html](https://1prime.ru/energy/20181113/829433052.html) (дата обращения 20.06.2020)
achievements from which they aspire to benefit not only in terms of money but also by strengthening their political positions at the global level. Prospection and extraction of natural resources is of particular importance, especially for the industry needs, moreover, high technologies designed increasingly active by Southeast Asian countries can be used in this field. Researches and their results also have a great impact on the innovations development, what is highly relevant for the modern society of XXI century. Besides, it’s visible too that states of Southeast Asia have chosen policy of partnership for the Arctic affairs what ensures them success – the situation is different in the Arctic Council where circumpolar states argue trying to provide their national interests and complicate cooperation for prosperity of the Arctic. Some Arctic states show interests in the partnership with Southeast Asian states what let them strengthen their position in the region and become engaged in the affairs. However, it is still not certain that the Arctic affairs are primary for Southeast Asia. Firstly, according to the analyze of current projects, it’s visible that some great states of the region, for instance, Malaysia, Indonesia, Thailand are not engaged in the Arctic matters enough or at all. These states have solid positions in their own regions and are great producers of IT. From the angle of such states as Vietnam and the Philippines there is a sort of anecdotal interest which reflects in particular projects. Nevertheless, we observe that Vietnam is seeking to strengthen its position in the Arctic – it may be related to the developing partnership with Russia, which gives Vietnam a lot of opportunities in trade and politics. The latter is highly relevant for Vietnam because it aims at leadership in Southeast Asia. Singapore shows more consistent interest – it takes part in many projects. Furthermore, it is an observer in the Arctic Council. It proofs Singapore’s direct and determined interest in the Arctic affairs. Singapore has economic and research reasons to be involved in the Arctic matters. Economic reasons include the issues concerning the Northern Sea Route: we have already mentioned that due to the development of the NSR Singapore may lose a significant part of its income deriving from serving vessels passing through the longer route. The state tries to compensate possible losses through the creation of port infrastructure in the Arctic applying its experience in shipping and high technologies; also it is necessary for Singapore to have access to energy resources because its own land is poor; Singapore is a great producer of equipment including offshore drilling rigs and it’s reasonable that it wants to realize its skills in new field. Research interests include in the opportunities for observing global warming in the Arctic. Singapore is pretty concerned about this issue because in case of rising the sea level it may lose a great part of its already small land. However, economic and research opportunities are relevant for the majority part of Southeast Asian states, so why doesn’t the North Pole attract them? Probably, the reason lies in the features of regional policy and in social, economic and political peculiarity which don’t let local governments and entrepreneurs stray away from their territories. The comprehensive analyze of such reasons requires an individual research which is going to be conducted later.

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