



Zvezda: shipyard of the future or Soviet-style black hole?

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On 1 April 2019 Igor Sechin – Vladimir Putin’s long-time confidante and CEO of the Russian oil giant Rosneft – met the president to discuss the Zvezda shipyard, a development project for which Rosneft took responsibility in 2013 (kremlin.ru/events/president/news/60195). Putin asked Sechin how many orders the yard needed to be profitable. The answer was 160 (down on the previous number of 178). Putin then asked how many firm orders the yard currently had. ‘Thirty-six’ was the reply, of which 25 came from Rosneft itself, five from Gazprom, five from the Russian shipping company Sovkomflot, and one (an icebreaker) from the port facilities provider Rosmorport. Putin responded: ‘But there are contracts with Novatek which are ready.’ Novatek is a privately-owned gas company with LNG projects in the Russian Arctic, and whose willingness or otherwise to order LNG carriers from Zvezda is vital to the yard’s success and an important part of the story in this paper. Sechin informed the president what was known even to outside observers, that Novatek had done no more than reserve capacity and that difficult negotiations on price and financial arrangements were ongoing. Putin requested curtly to be kept informed of progress in the negotiations.

One does not know whether such meetings, which take place in front of journalists and are reported on the presidential website, are entirely stage-managed and whether in this case Putin’s apparent ignorance of the state of the Novatek negotiations was feigned. One was aware, regardless, of the sensitivity of the issue. Over the next few days newspaper reports presented leaked accounts of substantial government subsidies being on the table for the Novatek orders (kommersant.ru/doc/3937377), and then that Novatek, through Sovkomflot, had signed a contract for the first of a series of LNG carriers that are required for Novatek’s next ‘Arctic-LNG2’ project on the Gydan Peninsula (kommersant.ru/doc/3938111). That contract was then confirmed in a Zvezda news release (dcss.ru/press-center/2019/ssk-zvezda-zaklyuchila-s-sovkomflotom-kontrakt-na-stroitelstvo-arkticheskogo-gazovoza-dlya-proekta-a/)

One doubts that that is the last word on the Novatek contracts or more generally on the future of the Zvezda shipyard. But it does mark a useful moment at which to outline the history of the project and take stock of its current status. The project is an important one in its own right. The priority given it by the state is indicated by Sechin, one of Putin’s heaviest hitters, being directly responsible and by a significant level of state funding. The success of major projects such as ‘Arctic-LNG2’ could well be dependent on the capacity of the yard to deliver functionally efficient vessels on time and at a competitive price.

The Zvezda story also provides the basis for discussion of broader issues in the ongoing – some might say eternal – Russian quest for a sustainable model for the building of a modern, value-adding economy which has something to gain from and offer to all parts of the sprawling Russian Federation. The model adopted is familiar to students

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of Russian industry policy under Putin: a strong state presence, including funding and subsidies; significant intra-governmental bureaucratic competition; and the use of the 'administrative resource' of powerful figures to decide the outcome of that competition and to drive the project forward, including by ensuring orders regardless of commercial logic.

The structure of the paper is essentially a detailed chronology of the policy process and bureaucratic struggle which is part of it, of the construction of the yard, and of the filling of its order book. Current shipbuilding activities are described and key future contracts, including the Arc7 gas carriers for Novatek that opened the paper. The last part of the paper describes some major issues that face the project: being price competitive, access to steel, and to technology. Despite a rhetoric of national sovereignty and capacity there is a heavy reliance on foreign technology and construction. The conclusion, while tentative, is that the project shows sufficient signs of what could be called a traditional Russian/Soviet approach to suggest that, while a yard will be completed and ships built, the net value to the economy and society will be negative.

History

Zvezda is a shipbuilding project in its early operational stages in the Russian Far East (RFE), with a particular emphasis on building vessels and platforms for use by oil and gas companies in the exploitation of the Russian Arctic continental shelf. It is located in the city of Bol'shoi Kamen', on the Ussuri Gulf directly east of Vladivostok, next to a long-existing defence enterprise for the repair and dismantling of nuclear submarines. That enterprise continues in operation, with some management and organisational overlap between the two but apparently no operational links.

The revival of the Russian shipbuilding industry became a priority issue when Putin took over the prime ministership in May 2008. Even before being formally sworn into office he visited the Admiralty Shipyard in St Petersburg, where he inspected progress in the building of an ice-capable oil tanker. At a meeting immediately following the inspection he was very critical of the state of Russian shipbuilding, noting that almost all orders were being placed abroad. In what information we have of the discussion at the meeting, there was no mention of the RFE

(1tv.ru/news/2008-05-13/189135-premier_putin_v_peterburge_provel_soveschanie_po_razvitiyu_sudostroeniya. The visit and meeting cannot be found on the government website.) One newspaper commentary suggested that Igor Sechin, newly appointed as deputy prime minister and previously board chair of Rosneft, would take over responsibility for shipbuilding, including pushing hard for a domestic shipbuilding capacity for the exploitation of the hydrocarbons of the Arctic shelf (rb.ru/article/putin-poslal-sechina-voztrojdat-rossiyskoe-sudostroenie/5243167.html). In fact it was Sergei Ivanov, deputy prime minister for the defence industry, who took responsibility for the sector. Sechin was, however, appointed chair of the board of directors of OSK (*Ob'edinennaia sudostroitel'naia korporatsiia*, the United Shipbuilding Corporation), a position he held until deputy prime ministers were required to give up board positions in state-owned companies in 2011. OSK is a state-owned shipbuilding conglomerate established in 2007 as part of the deprivatisation and centralisation of Russian defence-related industry at the time.

A year later, on 6 May 2009, the RFE was linked to shipbuilding at a meeting between Putin and Ivanov. Albeit very briefly, the state of shipbuilding in the RFE was singled out for specific mention in the published record of the meeting, in particular the situation at the shipyard in Komsomol'sk-na-Amure.² Putin noted that they would speak about that particular issue again the next day (archive.government.ru/docs/4082/). A few days later, Putin visited Komsomol'sk-na-Amure. Nothing about the visit is recorded on the government website. But on 10 May Putin's press secretary, Dmitrii Peskov, reported that before his departure for the RFE Putin had chaired a meeting in Moscow on shipbuilding in the region, presumably the meeting he mentioned to Ivanov. Peskov referred coyly to a discussion of the 'potential to establish in the Far East region a centre for shipbuilding'. He noted that discussions would continue during Putin's visit (vesti.ru/doc.html?id=283851).

Apparently, a meeting was held in Komsomol'sk-na-Amure on 11 May. Most press reports before and after the meeting focused on the situation in that city and on a decision to modernise shipbuilding facilities generally in the RFE, without mention of any particular site (ria.ru/20090510/170664787.html; newsru.com/russia/11may2009/mdr.html). But at a press conference held at the end of his visit, Putin is quoted as saying: 'We reached a final decision that, in order for shipbuilding in the Far East to be modern and competitive,

² The Amursk Shipbuilding Yard built the Soviet Union's nuclear-powered submarines. It had been privatised in the 1990s, and in 2009 was undergoing a financial crisis which ended in it being renationalised.

serious modernisation is required – in practical terms, new construction based on the ship building enterprise “Zvezda” (army.lv/ru/oboronka/374/18714). As far as the author is aware, that was the first public mention of the Zvezda project. We have no access to the discussions that led up to the decision.

As a consequence, we do not have information on what most strongly drove it. There were a number of issues in Russian policy-making coming to a head at the time. First, the decision to push forward with the development of the hydrocarbon resources of the Arctic shelf as a strategic priority; second, geostrategic tensions that had flared in the conflict between Russia and Georgia over South Ossetia and Abkhazia in 2008; and third, the decision to make the development of the Russian Far East a strategic priority (Fortescue, 2016). While the first two were relevant to the new focus on Russia’s shipbuilding capacity, it was the last which must have driven the choice of the RFE as the location for the new enterprise. The first two drivers had no locational component to them. In their terms, use of existing facilities in the Russian northwest might have been the more obvious choice (although the Soviet Union’s capacity to build large vessels, including tankers, had been located in Ukraine).

The project was first given organisational form in 2009 as a joint venture of OSK and the Korean firm Daewoo Shipbuilding and Marine Engineering (DSME), with an ownership split of 80:20. The JV was called Zvezda DSME. The management vehicle for the project was DCSS (*Dal’nevostochnyi tsentr sudostroeniia i sudoremonta*), the unit of OSK which held the corporation’s RFE assets, of which Zvezda was just one.

OSK was unable to get the project moving. Management was clearly preoccupied with its existing yards, above all the big defence-oriented yards in the northwest. It was revealed at the time that OSK was squeezed out of the project in 2013 that its chief executive had never visited the site and that Zvezda managers had had enormous difficulty getting decisions out of the OSK board of directors (kremlin.ru/events/president/news/19107: 22-23).³ As the OSK president explained: ‘Simply we began in the north, and began to acquire competencies there. That’s the way it worked out historically’ (kremlin.ru/events/president/news/19107: 25). OSK was unable to attract funding for the project and in 2012 DSME gave up and pulled out. It was said that one thing driving the DSME decision to pull out was the collapse on commercial grounds of the Russian-Norwegian-French deal to develop the enormous Shtokman gas deposit. That made the commercial prospects of a shipbuilding project oriented to the continental shelf too uncertain for the Koreans (kommersant.ru/doc/3408332).

The head of DCSS was Igor’ Borbot. In a somewhat mystifying sign of how distant from the project OSK was, Borbot was a local businessman who had thrived in the free-booting environment of the RFE during the governorship of Sergei Dar’kin. He had begun his business career as the controversial owner of the defence industry plant ‘Radiopribor’ and then built up a small business empire in food and construction (kommersant.ru/doc/2712455). How he came to head DCSS is unclear.

During the first half of 2013, DCSS negotiated a loan with Gazprombank for R12.35 billion rubles, a loan which was to have long-term personal consequences for Borbot. As it was being negotiated, storm clouds were gathering over his head. In March 2013, Dar’kin was replaced as governor of Primor’e region by Vladimir Miklushevskii, putting under threat anyone connected with the previous governor. The next month Dmitrii Rogozin, who had replaced Ivanov as deputy prime minister for the defence sector when Putin returned to the presidency the year before, strongly criticised DSCC. At that point, Borbot left the organisation and, interestingly, took up a position with Rosneft in Moscow (kommersant.ru/doc/2712455). This was presumably a sign of the renewed interest of Sechin, who had returned to Rosneft as chief executive, in getting involved in the Zvezda project. On 19 August 2013, Rogozin chaired a meeting at the project site at which Sechin presented a proposal that control of the project be handed over to a consortium of Rosneft, Gazprombank and potential technical partners (dcss.ru/press-center/2013/Na-soveshchani-i-v-Bolshom-Kamne-Dmitriy-Rogozin-i-Igor-Sechin-podtverdili-vazhnost-dlya-rossiyskogo-sudostroeniya-realizatsii-proekta-SK-Zvezda/). The list of potential members of the consortium was long and imprecise; the key player was clearly to be Rosneft.

The proposal was accepted at the Rogozin meeting and then taken to a meeting chaired by Putin on 30 August (kremlin.ru/events/president/news/19107). OSK’s neglect of the project was made all too clear, particularly by Sechin, and it had little choice but to go along with his proposal.⁴ A presidential instruction (*poruchenie*) followed

³ The page numbers in the citation are to an author-generated PDF version of the verbatim record of the meeting.

⁴ Indeed, much of the bickering at a bad-tempered meeting was over whether Rosneft should be required also to take two other RFE shipyards which clearly no one wanted. Denis Manturov, the Minister of Industry and Trade and here representing the interests of OSK,

on 24 September (dcss.ru/company/zakonodatelnaya-baza/), and ownership of DCSS was restructured such that Rosneft and Gazprombank held 75 per cent minus 2 shares, with the remaining shares – a blocking minority holding – held by OSK (kremlin.ru/acts/bank/38696). It was clear that none of the other companies mentioned as possible members of the consortium was interested in joining. It is likely that Gazprombank was involved only to protect its loan.

The chronological account will be disrupted here for a moment, to bring up to the present day the complex ownership structure of the project.⁵ As of late 2018 75 per cent minus 2 of DCSS shares were owned by STS (*Sovremennye tekhnologii sudostroeni*), 25 per cent plus one by OSK, and one Golden Share by the Russian state. DCSS owned 46.5 per cent of DVZ ‘Zvezda’ (*Dal’nevostochnyi zavod ‘Zvezda’*), which is the military part of the shipyard, but had no direct ownership of the structure responsible for building the civilian yard, SSK ‘Zvezda’ (*Sudostroitel’nyi kompleks ‘Zvezda’*). SSK was spun off from DVZ ‘Zvezda’ in December 2015. It was 99.9999 per cent owned by STS (one share being retained, for some reason, by DVZ ‘Zvezda’ (tass.ru/info/943633)). STS also held the 53.5 per cent of DVZ ‘Zvezda’ not owned by DCSS. STS in turn was owned 89 per cent by Rosneftgaz, with 5.5 per cent each being held by Rosneft and Gazprombank.

Rosneftgaz is the state’s holding company for its majority shareholdings in Rosneft and Gazprom. Sechin chairs its board. What should be done with its revenues – exclusively the dividends paid it by Rosneft and Gazprom – is a source of regular policy conflict. Putin approves of it being used as a source of off-budget funding for important state projects, over the protests of the Ministry of Finance (vedomosti.ru/economics/articles/2016/12/26/671204-putin-rosneftgaz). Its purchase of STS shares was precisely such a use of its revenues. At the end of 2018 Putin signed a decree allowing OSK to reduce its holding or exit altogether from DCSS (publication.pravo.gov.ru/Document/View/000120). The author has seen no reports that the corporation has taken up the possibility, or who has the shares if it has.

Although the decision that Rosneft take over the Zvezda project was made in August 2013, it took some time for the transfer of control to be complete. It was claimed that OSK and the Ministry of Industry and Trade dragged out the share transfers (novayagazeta.ru/articles/2015/02/11/63015-neschastlivaya-171-zvezda-187). But by August 2014 Sechin was ready for decisive action. In that month, DSCC’s financial director, Gennadii Tsariuk, was arrested. Borbot fled the country. In July 2016, he was arrested by US immigration officers for overstaying his visa. At the time of writing, he was still being held without bail while deportation to Russia was considered (konkurent.ru/article/20327). Tsariuk faced trial for ‘exceeding his authority’ in signing the Gazprombank loan agreement referred to above without the approval of the OSK Board of Directors. It was claimed that DSCC suffered a financial cost in the form of the interest payments on the loan. Tsariuk’s defence made the reasonable case that the loan had been extensively negotiated with all interested parties for six months, that it had been approved at the highest levels, and that the government had undertaken to pay the interest out of the federal budget. Nevertheless, Tsariuk received a sentence of six years prison (kommersant.ru/doc/3199556).

As is often the case with Russian justice, the issue was not the signing off of the agreement. Charges of ‘exceeding one’s authority’ are often used when it is in fact corrupt activities which are being claimed. In this case, the authorities suggested that the loan was channelled to construction companies controlled by Borbot (who, it should be remembered, was already working for Rosneft when the loan was approved), and that very little construction was done with the money. It is on those grounds that the return of Borbot to Russia is being sought. The loan was eventually repaid and the interest charges indeed covered by the federal budget (vedomosti.ru/business/articles/2017/10/24/739117-zvezda-subsidii).

Borbot’s replacement as head of DSCC – and initially of the Zvezda defence operation – was Vladimir Tsybin, a naval officer who had previously worked in Russian weapons export agencies and Rosoboronpostavka, before moving to Zvezda as Borbot’s deputy (vpk-news.ru/articles/40264). He remained as head of DSCC until November 2016, although always described as ‘acting’ in the position. He was replaced by Iurii Fil’chenok, who had been deputy general director of DSCC since 2009, but in March 2014 had been appointed head of DVZ ‘Zvezda’, that is, the purely military part of the complex. In taking over from Tsybin as head of DSCC, he retained his position as also head of the military operation (korabel.ru/news/comments/yuriy_filchenok_-

pushed hard that it should. Sechin, with Putin’s initially vigorous support, resisted. A vague compromise was reached, although in the end, by taking over DCSS, Rosneft gained responsibility for all OSK’s assets in the RFE.

⁵ For the ownership structure in diagrammatic form, see rbc.ru/business/20/03/2018/5a952eed9a7947216b3b26b5.

_direktor_dalnevostochnogo_zavoda_zvezda.html). He resigned at the end of 2018. It is the nature of resignations from such positions in Russia that an internal source stressed to reporters that there were no criminal implications in his departure. Simply a 'more active' manager was required (vedomosti.ru/business/news/2018/06/25/773669-gendirektor).

The lack of criminal implications was despite Zvezda continuing to have problems with its building contractors under Fil'chenok. On this occasion, some sources claim a connection between the beneficial owner of the post-Borbot construction company causing the problems and the Rosneft vice-president in charge of the Zvezda project, Andrei Shishkin. The construction company went bankrupt in summer 2018 (konkurent.ru/article/20208).

As yet the search for a more active manager has apparently borne no fruit, since DSCC continues to be run on an acting basis by its financial director Liudmila Lifshits, and DVZ 'Zvezda' by its first deputy general director Vladimir Goriainov. SSK Zvezda, most directly responsible for the construction of the yard, is headed by Sergei Tseluiko, an engineer recruited from the Northern Shipyard in St Petersburg (tass.ru/info/943633).

What is involved?

As already stated, the civilian Zvezda project is primarily oriented to the building of ships and 'elements' of platforms for use in the exploration for and recovery of hydrocarbons from the Arctic continental shelf. The capacity to build ships with an ice capability is essential. Indeed, that is considered to be an area in which Russian shipbuilders have a competitive advantage (dcss.ru/press-center/2012/Stroitelstvom-verfi-v-Bolshom-Kamne-zainteresovalis-yaponskie-zhurnalisty/).⁶ Zvezda claims an existing or future capacity to build supply and service vessels, oil tankers up to 350 thousand tonnes deadweight and gas carriers up to 250 thousand cubic metres, as well as ice-breakers, including nuclear powered.

The yard is being built according to the 'block' method, meaning that rather than a whole ship being built and fitted out on a slip, large sections – decks, hull, and so on – are prepared and fitted out individually in fabrication shops and then welded together on a slip. It is seen as a more efficient way of building ships in terms of both time and quality, but it does require substantial cranes and transfer arrangements to get the sections to the slip. Construction was originally envisaged as being in four stages, as presented by Rogozin at a meeting in September 2012 (dcss.ru/press-center/2012/Dmitriy-Rogozin-pobyvaet-na-Sudostroitelnom-komplekse-Zvezda/) and listed in the State Program 'Development of Shipbuilding 2013-2030'.⁷ Those stages were as follows:

Stage 1. Fabrication block (*blok korpusoobrabatyvaiushchikh proizvodstv*) and paint shops.

Stage 2. Open heavy building (*dostroechnyi*) slip with fitting-out shops (*tsekh nasysbcheniia*), giving the capacity to assemble ships up to 145,000 tonnes deadweight.

Stage 3. Dry dock (485x114x14 metres) and building shops (*dostroechnye tsekha*), giving a capacity to build ships up to 300,000 tonnes.

Stage 4. Building shops and dry dock for marine platforms, at Mysovoi (the Vostok-Raffles project).

By the August 2013 meeting at which the project was handed over to Rosneft, the first two stages had been merged, with completion of the new merged first stage being scheduled for late 2015 and operations to begin in the first quarter of 2016 (kremlin.ru/events/president/19107: 11). With continuing delays, Stages 2 and 3 were merged, with the completion date for the whole construction project remaining as 2024 (dcss.ru/press-center/2017/Na-verfi-v-Bolshom-Kamne-trudoustroyat-svyshe-7500-chelovek/). A transfer dock, needed to get a vessel from the slip to the water, is not listed in the brief summaries of the stages, but is described elsewhere as being part of the merged Stage 1, and due for completion in 2019 (dcss.ru/press-center/2017/Igor-Sechin-prinyal-uchastie-v-tseremonii-zakladki-kilya-peredatochnogo-doka-dlya-SK-Zvezda/; dcss.ru/press-center/2017/Na-verfi-v-Bolshom-Kamne-trudoustroyat-svyshe-7500-chelovek/).

⁶ Press releases in the DCSS on-line archive from the early years of its existence are clearly misdated. The URL at least identifies the year the release was originally issued.

⁷ The program was signed into law on 24 December 2012 (*raporiazhenie* No.2514-р), but was not attached to the directive when published. Here it has been sourced from portnews.ru/upload/basefiles/812_Programma%20razvitiia%20sudostro%20do%202020%20года.docx. The time-line is in Section 3.3 of the program.

The merging of Stages 2 and 3 suggests that the original plan to build a separate facility in a different location for platforms in partnership with Yuntai Raffles (the original Stage 4) has been abandoned, with indeed the fate of the entire platform part of the project unclear.⁸ It also led to some shuffling of the completion date of the project. In November 2017, Sechin announced that construction of the dry dock was being accelerated (kommersant.ru/doc/3468887), and it was later stated that completion of the shops providing sections for the very large ships that would be built on the dry dock had been moved forward from 2024 to 2020 (dcss.ru/press-center/2018/yuriy-trutnev-posetil-sudostroitelnyy-kompleks-zvezda/). It is very likely that this was to assure Novatek of the yard's capacity to build the gas carriers it will need for its 'Arctic-LNG2' project when it comes on line in 2023, that is, before the original 2024 date for completion of the project. A DCSS press-release suggests that the Stage 2 dry dock will be needed to build the carriers, although expected specifications are not available (dcss.ru/press-center/2018/vladimir-putin-prinyal-uchastie-v-tseremonii-nachala-stroitelstva-samogo-krupnogo-sukhogo-doka-v-ros/).⁹

Funding

In its early stages, the total cost of the project was said to be R110 billion. By 2015, it had reached R145 billion, of which R78.2 billion was required for Stage 1 (vedomosti.ru/business/articles/2017/10/24/739117-zvezda-subsidii). It stayed at that figure until early 2018, when it was put at R200 billion.¹⁰ The then head of DCSS put the increase down to inflation plus the increased scale of the project (dcss.ru/press-center/2018/verf-zvezda-mify-i-realnost/). He did not elaborate on what constituted the increased scale.

Funding was a major part of the problem faced by OSK in getting the project off the ground. There were early hopes that the Fund for National Welfare, one of Russia's two sovereign wealth funds,¹¹ would provide R90 billion for the project. When that money failed to materialise, predictably because of Ministry of Finance opposition (kommersant.ru/doc/2781644), Rosneft provided R12 billion from its own cash reserves – in the words of Sechin 'to speed things up' (government.ru/news/21140/). At the same time, it was decided that R60 billion would be provided by Rosneftegaz. The money was provided, in two instalments, as payments into the paid-up capital of STS, giving it the 89 per cent shareholding described above (government.ru/news/21140/). That, with the Gazprombank loan already described, was enough to cover the costs of building the first stage. At this point no funding directly from the federal budget had been committed. No such funds are allocated until 2021 (vedomosti.ru/business/articles/2017/10/24/739117-zvezda-subsidii).

In January 2016, Bol'shoi kamen' was granted the status of a territory of accelerated development (TOR, or sometimes TOSER) (government.ru/docs/21628/). The TOR concept, essentially a special investment zone, was devised initially to attract investment to the RFE. After a major policy fight it was eventually applied throughout the Russian Federation as an instrument for the diversification of the economies of one-company towns. In the case of Bol'shoi kamen', the status is stated as being primarily to ease administrative arrangements and provide funding benefits for construction firms building housing in the city and for firms manufacturing shipbuilding components for Zvezda (dcss.ru/press-center/2018/verf-zvezda-mify-i-realnost/).¹² The original TOR legislation excluded construction companies, but was amended for this particular case. In October 2016, the territory included in the TOR was expanded, to provide room for housing as well as a fish processing plant (government.ru/docs/24898/). The current list of residents of the Bol'shoi kamen' TOR include several firms providing accommodation and communal services, as well as construction firms and companies providing construction materials. There are a rather smaller number of firms providing shipbuilding components (erdc.ru/upload/reestr-tor.pdf). We will return to them below.

⁸ There had always been a note of conditionality about the Raffles project. In January 2013, Sechin told Putin that it would be needed only if exploitation of the shelf exceeded the levels hoped for (dcss.ru/press-center/2013/Platformy-dlya-osvoeniya-mestorozhdeniy-uglevodorodov-v-Severnom-ledovitom-okeane-budut-stroit-v-Primore/).

⁹ They are to be Arc7, that is independent sailing in consolidated ice up to 1.4 metre thick winter/spring and 1.7 metre in summer/autumn; in a channel behind an ice-breaker, 2.0 metre winter/spring, 3.2 metre summer/autumn.

¹⁰ At the then exchange rate this was roughly \$US3.6 billion.

¹¹ The FNW was split off from what was initially a pure stabilization fund to cover deficits in the state's Pension Fund. After a huge policy fight, however, it became a source of funding for industrial projects in 2014 (Fortescue 2016a, 435).

¹² The benefits offered to residents of the TOR can be found at dcss.ru/press-center/2019/generalniy-direktor-sudostroitelnogo-kompleksa-zvezda-sergey-tselyuko-dal-intervyu-informatsionnomu/.

The emphasis on housing is standard for large Russian projects. In the Zvezda case, it is expected that the funding for housing will come from regional sources, in practice central funds set up for the development of the RFE (government.ru/news/24612/), although Sechin did claim in 2015 to have allocated R500 million from the project budget (government.ru/news/21140/).

Progress

As already stated, the Zvezda project initially struggled to get off the ground under OSK. With the arrival of Sechin came the close attention of Putin, with the project being described as being ‘under his personal control’ (kremlin.ru/events/president/news/56112). He has visited the site on three occasions (November 2017, December 2017 and September 2018) and chaired a major meeting devoted to the project’s progress in November 2017.¹³ Note that this meeting was held on the premises of the Security Council. The importance of the project is also reflected in the attention given it by other senior officials. Andrei Belousov, Putin’s advisor on economic policy, chaired a meeting on-site in September 2015, and Medvedev visited in December the same year. Patrushev, head of the Security Council, visited in early 2016, claiming that the project was important for the nation’s economic security (scrf.gov.ru/news/1034.html). Rogozin visited in March 2015 and June 2016, and his successor as deputy prime minister for defence industry, Iurii Borisov, in August 2018. Iurii Trutnev, deputy prime minister for the RFE and presidential representative in the region, visited in February 2015 and June 2018.

Even after Rosneft took over, it took a while for the project to gain momentum. It received little high-level attention, at least of a public nature, for nine months after the August 2013 meeting at which the hand-over was formally decided. In April 2015 Medvedev chaired a meeting on the shipbuilding sector, at which the prime minister put pressure on all participants to work out a common approach to Zvezda (government.ru/orders/selection/401/17755/). But it was not until the end of that year that Rogozin reported with satisfaction that he could at last see signs of genuine activity at the site on the webcam feed in his office (government.ru/news/21140/). It was probably not coincidental that that was the same month in which Medvedev chaired another meeting on the project. During that meeting, Denis Manturov, Minister of Industry and Trade, and, as we will see immediately below, something of a Zvezda sceptic, claimed that the whole future of the project would be reviewed after completion of the first stage. Medvedev reacted strongly, making it very clear that there was already an irrevocable commitment to all three stages, something which he demanded be recorded in the minutes of the meeting. He was also insistent that more rapid progress be made on the project (government.ru/news/21140/). These were signs of a serious bureaucratic struggle that was being brought to an end.

OSK, if generally diplomatic in public, not surprisingly resented Rosneft shoving its way onto its turf, both taking away resources that it needed for its own activities and winning orders for which it believed it had the capacity (vedomosti.ru/business/articles/2015/11/24/618031-rosneft-zaplatit-zvezde-23-mlrd-rublei). There were claims of OSK delaying the transfer of DCSS shares to Rosneft (novayagazeta.ru/articles/2015/02/11/63015-neschastlivaya-171-zvezda-187), and as late as mid-2016 the head of OSK, Aleksei Rakhmanov, was arguing that ‘we and Rosneft are in the same submarine, so to speak. The main thing is that no distortions appear, that a program of orders is not focused on the development of a single enterprise’. He also called for what could be described as ‘managed competition’, with the government ensuring that there is more than one supplier in the various shipbuilding categories (vedomosti.ru/business/characters/2016/05/09/640376-naverstat-chto-delalos). OSK is closely connected to the Ministry of Industry and Trade – Rakhmanov was previously a deputy minister – and minister Denis Manturov often represents its interests. This can be seen in the effort he made to ensure that if Rosneft was going to push its way into shipbuilding in the RFE it would take responsibility for existing yards there that OSK was happy to be rid of, against the opposition of Putin (see footnote 3). It was very evident in his testy exchange of views on the long-term commitment to Zvezda with Medvedev reported above.

It was a battle that Manturov and OSK were never going to win. It was not just a matter of the superior ‘administrative resource’ enjoyed by Sechin. There was also the persistently lacklustre performance of OSK itself, which inspired no confidence among the leadership that Zvezda was not needed as an alternative or even replacement (kommersant.ru/doc/2781644).

¹³ At both the major meetings on Zvezda which Putin has chaired, he has been quite testy, as revealed in the verbatim accounts. For a journalist’s assessment of his mood at the 2017 meeting, see kommersant.ru/doc/3468887.

When Rosneft took over in the second half of 2013, the core structure of the fabrication shop had been built and it was more or less fitted out with equipment that had been delivered by Dutch and German suppliers under a general contract with the German company IMG (dcss.ru/press-center/2012/Pervoe-oborudovanie-dlya-krupneyshey-na-Dalnem-Vostoke-verfi-izgotovleno-v-Germanii/). But it was far from operational, and Rosneft orders for small vessels were being built in the old facilities of the military enterprise (dcss.ru/press-center/2014/Zvezda-gotovitsya-spustit-na-vodu-dva-sudna/).

When work got seriously underway, in late 2015, the planned completion date for Stage 1 was only a month or so away. It was after a delay of about six months that it was reported, in September 2016, that the first production facilities had been completed. It took another six months or so of testing and bedding down before, in autumn 2017, production work began, with the manufacture of sections of four ice-capable supply vessels for Rosneft getting underway in the fabrication shop (kremlin.ru/events/president/news/56112). At the same time, the base section of the 40,000 tonne transfer dock was laid (dcss.ru/press-center/2017/Igor-Sechin-prinyal-uchastie-v-tseremonii-zakladki-kilya-peredatochnogo-doka-dlya-SK-Zvezda/), and by December 2017 the assembly slip was ready for use (dcss.ru/press-center/2017/Vladimir-Putin-prinyal-uchastie-v-tseremonii-vvoda-v-ekspluatatsiyu-tyazhelogo-dostrochnogo-stapelya-SSK-Zvezda/).

In August 2018, the transfer dock was delivered by its Chinese manufacturer (dcss.ru/press-center/2018/Unikalnyy-plavuchiy-dok-gruzopodemnostyu-40-tysyach-tonn-dostavlen-na-verf-Zvezda/). The next month Putin watched on video link the pouring of the first concrete for the dry dock (kremlin.ru/events/president/news/58521). At the time of writing, the yard is capable of building some sections of ships up to 140,000 tonnes (the biggest vessel currently being worked on is an Aframax tanker at 114,000 tonnes), although as we will see below some sections with more difficult curved shapes have to be manufactured in Korea and brought to the site. The sections can be put together on the slip, although until the transfer dock is operational the vessel cannot be transferred to the water. Ships currently under construction are described below.

Orders

As big an issue for the project as construction has been the order book, with from the very beginning oil and gas producers and shipping companies being very reluctant to place orders. The original decision to launch the project was based on an estimate of demand when oil prices were high and there was a considerable degree of confidence in the commercial prospects of the Arctic shelf. DSME, however, pulled out of the original joint venture when the Shtokman cancellation shook that confidence. Nothing has happened since to restore it. Added to that was the lack of confidence in the project while it was under the control of OSK to deliver on any order.

Having Rosneft take over did not of itself increase the willingness of potential buyers to place orders, except that one important producer, Rosneft, was now a captive buyer. Part of the takeover deal was that Rosneft guaranteed that all future orders would be placed with Zvezda (dcss.ru/press-center/2015/Dmitriy-Medvedev-i-Igor-Sechin-posetili-Sudostroitelnyy-kompleks-Zvezda/). At the August 2013 meeting at which the decision to transfer control to Rosneft was approved, the Gazprom representative, in response to direct questioning from Putin, while making the right noises about the value of the project and the absolute need to use locally made vessels, made it clear that Gazprom was a gas company, not a shipping company, and that it preferred to contract out its shipping needs, not buy ships itself (kremlin.ru/events/president/news/19107: 42).

The head of Sovkomflot expressed a willingness to order from Zvezda, but stressed the importance of the yard gaining the capacity to fill buyers' needs quickly, since planning horizons were tight (kremlin.ru/events/president/news/19107: 41). Sovkomflot claims not to have the money to order many ships itself, and so there is to-ing and fro-ing between it and oil and gas producers over who should be responsible for ordering vessels.¹⁴ Usually, in the end the financial burden has to be accepted by the producers, although the fact that Sovkomflot has the largest fleet of Aframax tankers in the world suggests it is perhaps being disingenuous in its claims that it cannot afford to order many vessels from Zvezda (kommersant.ru/doc/3915460).

Ultimately, Gazprom, being a state-owned company, had no choice but to submit to constant pressure, and it has ostensibly become the biggest source of orders after Rosneft, although as we will see below few of them turn up in Zvezda's firm order book. The most dramatic public fight has been between Rosneft and Novatek. Novatek

¹⁴ For example, kommersant.ru/doc/3850604/.

is a privately-owned company, albeit owned by business people with close links to Putin, and that status gives it a greater opportunity to resist pressure. The state cannot simply direct its board representatives to vote as required, as recognised by OSK's Rakhmanov (vedomosti.ru/business/characters/2016/05/09/640376-naverstat-cto-delalos). There was a vigorous discussion between Putin and Leonid Mikhel'son, general director and part-owner of Novatek, at a meeting in June 2014, the latter strongly resisting suggestions from Putin that it should support the Zvezda project (kremlin.ru/events/councils/45831). Novatek's argument that its needs for its first big Arctic LNG project, Yamal LNG, could not possibly be met by Zvezda, given the timing of the two projects, was incontrovertible, and all orders for LNG carriers for that project were placed in Korea.

In 2015, it was determined that by 2030 the shipbuilding sector could expect 237 orders from the oil and gas industry, including for 36 large ships (government.ru/news/21140/). At this point, it was being forecast that Zvezda could expect 116 of those orders (dcss.ru/press-center/2015/Dmitriy-Medvedev-i-Igor-Sechin-posetili-Sudostroitelnyy-kompleks-Zvezda/). It was decided that a centralised effort to guarantee the orders was required. The resulting plan was referred to – in the future tense – by Patrushev after he visited the site in early 2016 (scrf.gov.ru/news/1034.html). It seemingly took until towards the end of 2017 for it to be finalised. At a November 2017 meeting Putin noted that it had been drawn up and asked for information on implementation. Beyond Putin's introductory remarks the proceedings of the meeting were not published, so we do not know what information on implementation he was given. However, Sechin stated to journalists after the meeting that the project needed 178 orders to be viable (kommersant.ru/doc/3468887), implying that the plan included that number in some form or another. As seen in the introductory paragraph to this paper, that number has been reduced to 160.

The drawing up of the plan was complemented by relentless changes to legislation and regulations making it ever more difficult to place orders abroad. Medvedev issued an instruction in 2015 requiring that even private companies sign Agreements of Intent with Zvezda (vedomosti.ru/business/articles/2015/04/22/rossiiskie-verfizhdut-zakazchikov; vedomosti.ru/business/articles/2015/09/07/607740-tsentru-zvezda-60-mlrd-rub-budet-nedostatochno). The shipbuilding sector was subjected to import substitution rules,¹⁵ which included provisions for the sort of centralised collection, aggregation and allocation of orders to supplier that was implied in the Zvezda long-term order plan (government.ru/news/21140/).

In April 2016, *Vedomosti* reported Rogozin as having said that the Security Council had instructed (*poruchil*) the government to amend its regulations to give the government commission for import substitution a veto on Russian buyers placing orders abroad (vedomosti.ru/business/articles/2016/04/03/636228-kontrolirovat-zakazi-goskompanii). The following year licensing regulations were modified to make purchases of domestic vessels and equipment a condition of obtaining a licence to operate on the Arctic shelf (kommersant.ru/doc/2983661).

Finally, and most recently, regulations were prepared that only Russian ships be allowed to sail the Northern Sea Route. Novatek was particularly unhappy with this requirement, with its lobbying apparently having the desired effect, with some being of the view that the exemptions it has received are sufficient to remove the need to order gas carriers from Zvezda for the 'Arctic-LNG2' project (kommersant.ru/doc/3663908; kommersant.ru/doc/3850604; vedomosti.ru/business/articles/2019/03/18/796690-novateku-mogut-neponadobitsya).

Although most of these measures gave no explicit preference to Zvezda over OSK, all the pressure slowly had some effect on Zvezda's order book. In September 2017, it was reported that the yard still had only one order other than from Rosneft (kommersant.ru/doc/3408332). By November that year, it was claimed by Sechin that 32 orders from Gazprom had been added to Rosneft's 56 (dcss.ru/press-center/2015/Dmitriy-Medvedev-i-Igor-Sechin-posetili-Sudostroitelnyy-kompleks-Zvezda/), although, as we will see below, few of those are firm orders. The pressure on Novatek has led to a contract for the first of the 14-15 Arc7 gas carriers needed for its 'Arctic-LNG2' project, as already described. Zvezda has also won tenders both for diesel-powered ice-breakers and the nuclear-powered 'Leader' ice-breaker. These were all vessels for which previously OSK's Baltzavod had won contracts (kommersant.ru/doc/3771153).

¹⁵ The import substitution plan for the shipbuilding sector was signed off in March 2015. Most of its reasonably modest targets were set for the years 2018-22, while Zvezda would be receiving orders but before it was fully built (stavminprom.ru/docs/otraslevye-plany-po-importozameshcheniyu-razrabotannye-ministerstvom-promyshlennosti-i-torgovli-ross/).

The lack of enthusiasm among oil and gas producers has meant that the project has explored the possibility of looking more widely for orders, including research, geological survey and meteorological vessels, as well from as the nickel producer Norilsk Nickel, which ships nickel and copper in various forms from its Arctic port at Dudinka. There has been a lot of denial of interest by those identified as potential buyers (kommersant.ru/doc/3675554). In an April 2018 interview, then DCSS head, Iurii Fil'chenok, was far from consistent in his attitude towards such non-core orders. He said that Zvezda was not interested in taking orders from the fishing industry, because the vessels were too small, but then pointed out its competitive advantage in building large fishing 'mother' ships (dcss.ru/press-center/2018/verf-zvezda-mify-i-realnost/). There is no indication that Zvezda has received any orders for such vessels. However, Zvezda has put its hat in the ring for two oceanographic research ships, with the Ministry of Industry and Trade championing the claims of OSK to the order. It is reported that at a June 2019 meeting chaired by the deputy prime minister with responsibility for scientific research, Tat'iana Golikova, a proposal was put forward that the order be split between Zvezda and OSK, hardly a commercially attractive proposition (government.ru/news/37023/; kommersant.ru/doc/4012666).

There are of course many forms of 'order', from the firmest contract to vague 'preliminary agreements'. The most recent detailed list of firm orders consists of: 12 Aframax oil tankers (10 for Rosneft and 2 for Sovkomflot); 12 Arctic 'shuttle' (*chelnok*) tankers; seven supply vessels (4 for Rosneft and 3 for Gazprom); three medium-sized MR tankers for Sovkomflot;¹⁶ a shallow-draft ice-breaker for Rosmorport; a vessel for transporting drilling crews and a service vessel for production platforms (kommersant.ru/doc/3854099).¹⁷ It will be noted that there are no Novatek orders in this list and a very small number from Gazprom.

Before examining why the project has had such difficulty attracting firm orders, work currently underway will be described. At the moment, there are three vessels for which the yard has received multiple firm orders. Multiple orders are important, as the Russian shipbuilding industry strives to achieve the benefits in terms of design and production competence and economies of scale that come with series production. The three types of vessel are supply ships, Aframax oil tankers, and shuttle (*chelnok*) oil tankers. This list does not include LNG carriers, since there are as yet no firm orders for them, despite great hopes being placed in them.

Supply ships

The first actual shipbuilding that took place in the new civilian facilities – as distinct from Rosneft orders for small vessels built in the existing military yard – was in late 2017, with the laying of the base sections (*zakladka sektsii*) of four supply ships (dcss.ru/press-center/2017/Vladimir-Putin-prinyal-uchastie-v-tseremonii-vvoda-v-ekspluatatsiyu-tyazhelogo-dostrochnogo-stapelya-SSK-Zvezda/). No details are available on the specifications of these vessels, beyond their having the high ice rating of Arc8, that they are multi-functional, and were said by Rosneft on one occasion to be around 100 metres in length. The first is due to be on the water for final fitting out and testing in 2019 (vedomosti.ru/business/articles/2015/11/24/618031-rosneft-zaplatit-zvezde-23-mlrd-rublei; dcss.ru/press-center/2018/vladimir-putin-prinyal-uchastie-v-tseremonii-nachala-stroitelstva-samogokrupnogo-sukhogo-doka-v-ros/).

Aframax oil tankers

Aframax tankers are medium-sized oil tankers, DWT 80,000-120,000 tonnes. The particular tanker being built by Zvezda is 114,000 tonnes (measuring 250x45x15 metres), with an ice rating ICE-1B. That is a rating that assumes ice-breaker assistance, with a capacity to handle non-consolidated ice channels 0.8 metres thick.

The keel for the first Aframax tanker was laid in September 2018, and the port side section was reported by Sechin to be in place on the slip at that time (dcss.ru/press-center/2017/Vladimir-Putin-prinyal-uchastie-v-tseremonii-vvoda-v-ekspluatatsiyu-tyazhelogo-dostrochnogo-stapelya-SSK-Zvezda/). Metal-cutting began for the second and third ships in November 2018 and February 2019 respectively (dcss.ru/press-center/2018/sudoverf-zvezda-pristupila-k-seriyomu-proizvodstvu-tankerov-klassa-afmaks/; dcss.ru/press-center/2019/sudoverf-zvezda-pristupila-k-stroitelstvu-tretego-tankera-afmaks/).

¹⁶ MR tankers are from 35,000 to 55,000 DWT.

¹⁷ An even more recent list has a total of 36 firm orders, 25 from Rosneft, 5 from Gazprom, 5 from Sovkomflot, and one from Rosmorport (kremlin.ru/events/president/news/60195).

Although some sections of the Aframax tankers can be made on-site, the yard does not as yet have the equipment needed to make large sections with complex curves, specifically the stern, bow and anchor. These are being imported from Korea. One specialist doubts that Zvezda will have the required equipment within the next 3-4 years (kommersant.ru/doc/3819041). The latest estimate is that the first Aframax will be on the water in 2021 (dcss.ru/press-center/2019/generalniy-direktor-sudostroitel'nogo-kompleksa-zvezda-sergey-tseluyko-dal-intervyu-informatsionnomu-/).

Shuttle tankers

Most reports speak of vessels of 42,000 tonnes DWT, with one of 69,000 tonnes (257x34 metres, draught 14 metres and height 21 metres) (dcss.ru/press-center/2018/SSK-Zvezda-postroit-dlya-Rosnefti-tanker-usilennogo-ledovogo-klassa-dedveytom-69-000-tonn/).¹⁸ However, in April 2019 Sechin reported to Putin that work had begun on a shuttle tanker of 110,000 tonnes (kremlin.ru/events/president/news/60195). They are apparently of Arc6 ice rating, that is, able to handle independent sailing in open ice 1.1 metre in winter/spring or 1.3 metre in summer/autumn, and in an ice-breaker channel 1.2 metre winter/spring, 1.7 metre summer/autumn. While a start has been made, both in terms of orders and building, there are still question marks over the project's order book, in particular its capacity to gain significant firm orders from Gazprom and Novatek.

What is the problem?

There are demand and supply issues that affect the order book. On the demand side, there is the general issue of the commercial viability of Arctic shelf oil and gas exploitation, not something on which the author claims any expertise. But a narrower example of the calculations behind Zvezda orders on the demand side reveals the uncertainties. A large number of Rosneft orders are for vessels to deliver oil along the Northern Sea Route from a pipeline terminal on the Taimyr peninsula, the pipeline carrying oil from new deposits around Rosneft's Vankor field and the Piiarkhsk fields of Rosneft's partner Neftegazkholding. Those deposits are as yet undeveloped and the pipeline is not built. It is far from a done deal, with lobbying from Transneft against the proposal, since it would reduce volumes through its existing pipeline network. Lobbying in favour, including from Rosatom – the operator of nuclear-powered ice-breakers – is in the context of Putin's expectations of greatly increased traffic along the Northern Sea Route (kommersant.ru/doc/3896485).

There are also issues on the supply side. Beyond concerns as to the capacity of the project to deliver vessels according to schedule, a major issue is price. Novatek has made it clear that to order Arc7 gas carriers from Zvezda for its 'Arctic-LNG2' project it expects to pay a commercially competitive price. This is in the context of reports that Zvezda has offered a price 20-40 per cent above the market price. Even if all 15 carriers were ordered, the price would be \$603 million each, as against a price in Korea of \$305 million (vedomosti.ru/business/articles/2019/02/17/794352-verf-zvezda).

Not unexpectedly subsidies are being offered. The state was said to be considering compensating Zvezda for up to 30 per cent of cost overruns on the 'Arctic-LNG2' order, meaning, presumably, that it will pay up to 30 per cent of the premium that has to be paid for ordering from Zvezda (vedomosti.ru/business/articles/2019/01/31/792986-sudoverf-zvezda). In the latest reports the 30 per cent has been reduced to 20, but it is still estimated that the subsidy could cost the state R53.5 billion (kommersant.ru/doc/3937377). VEB, the Russian state-owned development bank with a spectacular record of bad loans, has appeared as a lender to Rosneft, presumably at non-commercial rates, for its purchase from Zvezda of at least one of the Arc6 shuttle (*chelnoke*) tankers it has ordered. The size of the credit, R18.5 billion, suggests to commentators that the vessel is overpriced (kommersant.ru/doc/3841581).

It was reported in April 2018 that Medvedev had signed an executive order (*postanovlenie*) on credit subsidies for shipbuilding projects worth more than R100 billion. Two-thirds of interest charges would be paid on credits taken out since 1 January 2017, with R800 million set aside in the next three-year budget to fund the scheme.¹⁹ One also notes the appearance of GTLK in Zvezda-related activities. It was one of the signatories to a 2017 agreement to build five Aframax tankers (with Rosneft and Sovkomflot the other signatories), and one of its representatives was present at the metal-cutting ceremony for the third in the series in February 2019

¹⁸ In kommersant.ru/doc/3841581 they are described as of the Panamax class.

¹⁹ The executive order is described at dcss.ru/press-center/2018/verf-zvezda-mify-i-realnost/. The author not been able to find it.

(kommersant.ru/doc/3443260; dcss.ru/press-center/2019/sudoverf-zvezda-pristupila-k-stroitelstvu-tretego-tankera-aframaks/). GTLK is a state-owned leasing company which plays a prominent and – for the state – expensive role in industry policy projects in a range of sectors. VEB also claims to be using its leasing facility to assist Sovkomflot and Novatek in the purchase of Zvezda-built ships (kremlin.ru/events/president/news/60205). It is typical of recent Russian economic and industry policy that relatively tight control is exercised over the budget, because of the influence of the Ministry of Finance and Central Bank (Fortescue, 2017). However, significant non-budget sources of funding are available: Rosneftgaz, using the dividends the state receives from Gazprom and Rosneft, and VEB and other sources of subsidised credit, including leasing agencies.

There are other features of the project which some would say exhibit common characteristics of the Russian way of doing things, not necessarily with a beneficial outcome. One is to tie lots of things together to show that an overall project is worth doing, ‘killing lots of birds with one stone’. The multi-pronged strategy behind the whole project is to provide vessels for hydrocarbon exploitation on the Arctic shelf, to modernise Russian shipbuilding, to reinforce technological sovereignty, and to develop the Russian Far East.

A narrower example of the phenomenon is that described above, of a significant number of Rosneft orders being based on a pipeline from East Siberian oil fields to the Arctic, with oil then being delivered to eastern and western markets along the Northern Sea Route. Rosneft as the owner of Zvezda likes the idea because it allows it to place orders for the required tankers, as well as the required ice-breaker; Rosatom, the provider of the power plant and operator of the ice-breaker, also wants that part of the deal; Rosneft’s oil ally, Neftegazkholding, wants to be able to develop its field without having to plug into Transneft’s network; and Putin wants traffic flowing along the Northern Sea Route. These might be multiple win-win situations, but they can also be multiple lose-lose situations, with a series of doubtful propositions propping each other up, ultimately all at the expense of the state and other possibly more worthy projects.

Another characteristic Russian way of going about things can be seen in how the supply of steel for the operation has been handled – characteristic in two senses: that things are dealt with on the run, and the problems that size and distance create for the country’s development. It was said that at the first stage the project’s demand for the heavy plate steel required for shipbuilding would be 90,000 tonnes per annum, building to a maximum of 330,000 tonnes per annum when operating at full capacity (vedomosti.ru/business/articles/2016/09/02/655377-vostoke-metallurgicheskii-zavod; kommersant.ru/doc/3078231).

The issue of where this quantity of steel was to be sourced surfaced, in public at least, only in 2016. The nearest domestic producers able to supply steel of the required characteristics were several thousand kilometres away in West Siberia (ZSMK) and the Urals (MMK) (vedomosti.ru/business/articles/2016/09/02/655377-vostoke-metallurgicheskii-zavod). The only steel producer in the RFE, Amurmetall, is an electric arc smelter producing light construction steel and totally unable to produce shipbuilding steel. It has been in chronic financial difficulties and non-operational more often than not for decades. The smelter is of the electric arc-type, fed by scrap, not least because the RFE is not rich in the iron ore needed to feed a traditional smelter.²⁰

In February 2016, Patrushev said after visiting the site that the sourcing of steel was under examination (scrf.gov.ru/news/1034.html). In September that year at a meeting chaired by Putin, Sechin asked for the president’s support for a proposal to build the required capacity on site. Sources at what was a closed meeting stated that Sechin gave no details as to what sort of capacity he had in mind, whether purely a rolling mill or also smelting capacity. Sechin and Rogozin claimed that a site with some sort of facilities already in place had been found 100 kilometres from Vladivostok (kommersant.ru/doc/3078303). What enterprise that might have been remains unclear. The following month, Manturov referred to discussions with South Korean firms about building a mill nearby (with presumably the Koreans supplying the slabs for milling). He claimed that Rosneft would not require any state funding to build the facility (vedomosti.ru/newline/top/business/news/2016/10/04/659612-manturov).

In December 2016, Rosneft signed a joint venture with UGMK, a non-ferrous producer with no steel capacity of its own, for the supply of steel to the project. It was based on the import of steel initially, with the possibility of building a mill and perhaps a smelter in 3-4 years time (vedomosti.ru/business/articles/2016/12/02/667864-sp).

²⁰ There are a couple of small and troubled iron-ore projects in the region broadly defined – in South Yakutia and in the Jewish Autonomous Region. Neither has ever been linked to a Zvezda-based steel smelter (Fortescue, 2016b, 53-54).

rosnefti-ugmk). Sechin has claimed that a feasibility study for what sounds like a full-cycle steel plant was prepared by Hatch and McKinsey, but no information is available on its findings. (vedomosti.ru/newspaper/articles/2018/07/19/775909-stroyaschayasya-rosneftyu). In June 2019, the head of the Italian firm Danieli revealed that he was in discussions with Zvezda regarding building steel capacity on-site (vedomosti.ru/business/characters/2019/06/30/805436-predsedatel-pravleniya-danieli).

At a meeting with Sechin in April 2019, Putin asked about progress on the issue, Putin himself volunteering the opinion that it was necessary to build a steel plant on-site. Sechin agreed that it was impossible to transport by rail the 24 metre long steel sheets needed to be competitive with South Korean producers, and that building a plant on-site was one possibility. The other was the entirely obscure interest of Russian steel producers in offering a solution. Sechin assured Putin that the matter was being discussed with the Ministry of Industry and Trade and would be resolved. Putin pointed out that it had to be resolved in synchronisation with the other development stages of the project. It was with those words that the reported part of what generally sounded like a difficult meeting for Sechin ended (kremlin.ru/events/president/news/60195).

The current thinking, as reported, is that – if a smelter is to be built – it would be an electric-arc furnace fed by scrap. This is in circumstances when it is regularly claimed that Amurmetall is chronically unprofitable because scrap is so scarce and expensive in the RFE. Experts also point out that the minimum output for a smelter to break even is 900,000 tonnes per annum; at its peak Zvezda will require only 330,000 tonnes per annum. It is unclear that there is a local market for the difference. The cost of building a rolling mill is estimated at \$1.5-2 billion; double that for a full-cycle plant (vedomosti.ru/business/articles/2019/06/30/805439-zvezda-postroit). While the decision on on-site capacity is being made, there are conflicting accounts of where steel is being sourced. One account states that it is being delivered from Korea through the Rosneft-UGMK JV (vedomosti.ru/business/articles/2019/02/17/794352-verf-zvezda). In June 2017, however, Fil'chenok stated in an interview that Russian steel was being used, shipped by rail from MMK, Severstal and the Urals, with some rolled steel supplied from St Petersburg and some special steels from Korea and China (news1.ru/vlad/2017/06/27/160475/). That sourcing steel from domestic producers in Western Russia is an approach being considered for when the yard's steel needs increase is suggested by a meeting chaired by deputy prime minister Dmitrii Kozak in February 2019 and attended by Russian steel producers, Zvezda and Russian Railways. The last was present because if the required steel were to be provided by producers located in western Russia, Russian Railways would need to upgrade its rolling stock and the Severomuisk tunnel (vedomosti.ru/business/articles/2019/02/17/794352-verf-zvezda).

Time will tell which approach to sourcing steel is adopted, but all involve costs that threaten the competitiveness of the project. The 'do it on the run' element of sourcing steel for the project can also be seen in design and construction processes.

Technology and engineering centre

A 2016 consultancy report attributed the lack of competitiveness of Russian civilian shipbuilding to the low quality of 'standard design solutions' to the various technological and construction issues facing shipbuilders, that is, an excessive reliance on making it up as you go (kommersant.ru/doc/2989693). There was evidence of this problem in the early history of Zvezda. As Zvezda's head of civilian production said after the launch of two small launches for Rosneft in April 2014: 'The job was not straightforward. We had to make a lot of corrections and change things on the spot.' This was work done in the military yard (dcss.ru/press-center/2014/Zavod-Zvezda-spustil-na-vodu-dva-sudna-obespecheniya-ekologicheskoy-bezopasnosti/).²¹

It is common Russian practice for project construction to begin without design documentation (government.ru/docs/26376/; government.ru/news/22178; vedomosti.ru/economics/articles/2017/07/10/717232-menedzheri-veba-bonusov). Supporters of the most recent construction company to strike trouble with the project claim that it was unable to meet deadlines because of constant delays while major changes were made to designs (rbc.ru/business/20/03/2018/5a952eed9a7947216b3b26b5).

²¹ One also wonders about the project management wisdom that led to difficulties installing a large crane inside an already completed building (dcss.ru/press-center/2012/Unikalnaya-stroitel'naya-operatsiya-usheschno-provedena-na-vozvedenii-Sudostroitel'nogo-kompleksa-Zvezda/).

Such changes contribute to signs of the re-appearance of another classic feature of Soviet-era project management: constant changes of plans and bureaucratic/funding delays leading to the delivery of equipment that is unwanted by the time it arrives or before the site is ready for installation. As the head of Zvezda complained while OSK controlled it: ‘Because of [difficulties in getting sign-off from the OSK board] processes related to the purchase of technical equipment broke down. We would buy something, it would arrive, sit in the port for nine months, because funding issues hadn’t been resolved’ (kremlin.ru/events/president/news/19107: 22).

While clearly not all of these issues have been resolved under Rosneft, at least funding is sufficiently well secured that, when combined with Sechin’s ‘administrative resource’, persistent forward progress is being made. However, design and sequencing issues have always been compounded by the lack of long production runs, leading to high-cost design approaches and difficulties in maintenance and repairs. Under the Rosneft regime there has been a lot of emphasis on the need for serial production (news.vl.ru/vlad/2017/06/27/160475/), a need that has presumably been used as one of Rosneft’s arguments for all orders being given to Zvezda. But the problems of a limited market – even one subject to administrative control – remain.

In trying to deal with design issues much attention has been concentrated on in-house design and engineering, with the phrase ‘engineering centre’ being much touted. In practice, that has meant the purchase by Rosneft of the Nizhnii Novgorod design bureau ‘Lazurit’ (government.ru/news/21140/), in Soviet times a submarine design bureau which in post-Soviet times tried with limited success to diversify into civilian and recreational design under private ownership. ‘Lazurit’ now has offices in St Petersburg, Vladivostok and Bol’shoi Kamen’. Despite the purchase of ‘Lazurit’, however, a lot of design work is still contracted out, usually to foreign firms.

Foreign presence

Indeed, foreign involvement in the project continues to be heavy, despite the severe worsening of relations with the West in recent years and some strong nationalist rhetoric related to the project. At the August 2013 meeting at which the decision to hand Zvezda over to Rosneft was confirmed Putin said: ‘Russian purchasers must keep in mind that all things being equal they must place their orders with domestic yards, and not give jobs and a tax base to foreigners. Don’t forget where you’re working’ (kremlin.ru/events/president/news/19107: 5).

Sechin, despite his reputation as a silovik, has always been prepared to engage with foreign partners. His whole Arctic shelf strategy was based on close cooperation with foreign partners, in particular Exxon-Mobil, and in the direct sense it was Western sanctions rather than a Russian policy decision which ended that cooperation. Such cooperation is also very evident in the Zvezda project, in both the construction of the shipyard and the design and building of the ships. With regard to construction of the yard, as Fil’chenok put it in April 2018, ‘we want to build a world-class facility. We are attracting the leaders in the field, and that means foreign firms.’ After a not very convincing account of Zvezda’s efforts to get local suppliers involved, he noted that ‘a purchaser wants the most up-to-date equipment, and he’s not going to wait for the enterprises of Primor’e region to learn how to produce such equipment’ (dcss.ru/press-center/2018/verf-zvezda-mify-i-realnost/). Rosneft has even gained exemptions from import substitution rules for the project, something which has upset OSK (kommersant.ru/doc/3745064; v.edomosti.ru/business/articles/2019/04/17/799346-general-electric-novateka). Local companies have been used predominantly in the actual construction,²² and not without the problems already described.

However, the equipment and machinery are largely imported.²³ The original equipment for the fabrication shop ordered in the OSK era came from the Netherlands and Germany under a contract with the German firm IMG (dcss.ru/press-center/2012/Nachalas-podgotovka-k-montazhu-oborudovaniya-na-Sudostroitelnom-komplekse-Zvezda/). Once Rosneft became involved China became the supplier of choice, with cranes provided by Cosco Heavy Industry Company, dock transporters by Suzhou Dafang Special Vehicle (dcss.ru/press-center/2015/Rosneft-privlekaet-proizvoditeley-unikalnogo-oborudovaniya-dlya-sudostroitel'nogo-kompleksa-Zvezda/), and the transfer dock built in China by Qingdao Beihai Shipbuilding (BSIC) (dcss.ru/press-center/2018/Unikalnyy-plavuchiy-dok-gruzopodemnostyu-40-tysyach-tonn-dostavlen-na-verf-Zvezda/). China

²² Although note the claim that SSK is seeking permission to employ a large number of foreigners – presumably Chinese, since it is a Chinese contract - to build the dry dock (rbc.ru/business/25/06/2018/5b30f7169a7947e19881c916).

²³ A contract given Uralmashzavod for cranes is a rare exception (dcss.ru/press-center/2018/Uralmashzavod-postavit-SSK-Zvezda-dva-mostovyykh-krana-gruzopodemnostyu-320-tonn-kazhdyy/).

Communications Construction (CCCC) is building the dry dock (rbc.ru/business/25/06/2018/5b30f7169a7947e19881c916).

But other suppliers have not been completely excluded. In 2016 a cooperation agreement was signed with Siemens for the development of various advanced concepts, including the ‘digital wharf’ (dcss.ru/press-center/2016/Sudostroitelnyy-kompleks-Zvezda--pervyy-rezident-TOR-Bolshoy-Kamen/); in February 2017, a contract was signed with the Korean company Rainkho for an in-yard vessel transportation system (dcss.ru/press-center/2017/Na-verfi-v-Bolshom-Kamne-trudoustroyat-svyshe-7500-chelovek/); mid-2017 saw an MoU with the French company Gaztransport & Technigaz on loading systems for gas carriers (dcss.ru/press-center/2017/Pri-podderzhke-Rosnefti-SSK-Zvezda-i-GTT-dogovorilis-o-sozdanii-gruzovykh-sistem-dlya-sudov-gazovozov/); and the ‘Sapphire’ plant, under construction and scheduled for completion in the second half of 2019, is a JV with General Electric for the manufacture of steering mechanisms (dcss.ru/press-center/2019/zaversheny-stroitelno-montazhnye-raboty-na-zavode-vinto-rulevykh-kolonok-sapfir/). The ‘Sapphire’ plant is situated in the Bol’shoi kamen’ TOR, mentioned above. In 2017 Fil’chenok claimed there were five residents of the TOR contributing inputs into Zvezda’s shipbuilding (news1.ru/vlad/2017/06/27/160475/). They include SSK and the Zvezda military yard, ‘Sapphire’, and ZMT, a JV to be described immediately below. Which the fifth one is remains unclear.

Foreign companies are also heavily involved in ship design and construction. The JV ‘*Zvezda morskije tekhnologii*’ (ZMT) is a partnership with the Dutch firm Damen for the design and construction of the supply ship order (dcss.ru/press-center/2017/Na-verfi-v-Bolshom-Kamne-trudoustroyat-svyshe-7500-chelovek/). In 2017 ‘Lazurit’ set up a joint venture with Hyundai to handle all the design documentation for the Aframax orders. It is claimed that the basic design concept was done by ‘Lazurit’, and the detailed documentation by the Hyundai JV (kommersant.ru/doc/3854099). Zvezda’s partner for the design and construction of the Arctic shuttle tanker is Samsung (dcss.ru/press-center/2017/Vladimir-Putin-prinyal-uchastie-v-tseremonii-vvoda-v-ekspluatatsiyu-tyazhelogo-dostrochnogo-stapelya-SSK-Zvezda/). In September 2016 DCSS signed an agreement with DSME to set up a JV for LNG gas carriers. Novatek’s Mikhel’son stated that this could be the basis for providing the capacity to build gas carriers for the ‘Arctic-LNG2’ project, DSME being the company that built the carriers for its Yamal project (kommersant.ru/doc/3443260). An agreement has, at least in the past, existed with Keppel (Singapore) to work on drilling platforms (vedomosti.ru/business/articles/2016/09/02/655381-sudoverf-zvezda), although no recent accounts of any activity under that agreement have been found.²⁴

Conclusion

It is far too early to say that the Zvezda project is a failure. But there are grounds for concern. The project has always been firmly tied to the exploitation of the hydrocarbon resources of the Russian Arctic shelf. It is not part of this analysis to make a judgement on the commercial prospects of Russia’s shelf, with or without sanctions. There are, nevertheless, those who are sceptical.

A narrow but important question is the long-term implication for Rosneft of being a totally captive buyer of vessels from a single supplier, and to a greater or lesser extent bearing not just the commercial risks of purchasing vessels from that supplier, but the financial risks of owning the whole project.

In broader terms, the same question can be asked of the desirability of lack of choice for all Russian buyers of ships. The *Kommersant* commentator Anastasia Vedeneeva has represented the project as the replacement of OSK by Zvezda as the new national champion in the shipbuilding sector (kommersant.ru/doc/3854099). There might be some sense in creating a new national champion from scratch, rather than building on existing yards in locations and with layouts that limit their modernisation. But there are fears of the effects on competition, whether in the niche oil and gas sector that Zvezda has claimed for itself or shipbuilding more broadly if that niche were to prove too small to provide viability. In considering this issue, it should be noted that it is not only bureaucratic and corporate empire-building that leads to a single national champion – it is also the commercial logic of serving a

²⁴ The author has found no information on the power plants to be used in any of the vessels described here. Some stress is placed on the fact that the Aframax oil tankers run on natural gas; there is no evidence that any Russian producer is capable of producing such power plants (dcss.ru/press-center/2017/Na-verfi-v-Bolshom-Kamne-trudoustroyat-svyshe-7500-chelovek/).

relatively small domestic market with poor prospects for export.²⁵ The need for serial production and some sort of economies of scale represents a strong argument for monopolisation, and in this case monopolisation of a notably coercive nature.

The coercion is not just the all too characteristic use of the criminal justice system as a management tool, but the use of administrative methods to drive the behaviour of buyers at very considerable risk to commercial logic. And as always where commercial logic is trumped by administrative methods, subsidies come into play. The subsidies on offer for the 'Arctic-LNG2' gas carriers are substantial, and as the Zvezda yard becomes a physical reality with large sunk costs, a captive workforce, and buyers ultimately competing in a global market place, the pressure to lift subsidies to whatever level required is likely to become irresistible.

Other questions can be asked about the project. The first is whether Russia is taking on things better left to others because of geostrategic insecurities. We have seen that Sechin is prepared to involve foreign partners and suppliers, and recent commentary casts doubt on the commitment, even in the long term, to having a truly independent shipbuilding capacity. The weakening of import substitution rules for Zvezda lead some commentators to suggest that the project will remain essentially an assembly operation beyond the foreseeable future (kommersant.ru/doc/3937377; kommersant.ru/doc/3946097).

Russia has a long history of bringing in foreign technology with a view to becoming ultimately self-reliant, in a way that reveals the pluses and the minuses of such an approach. The plus is the ability to achieve quickly a capacity that would have been completely unrealisable if there were full reliance on domestic inputs. The minuses are falling hostage to political pressures from supplier countries and, when the time for self-reliance comes, a rapid falling behind global competitors. With regard to the first minus, it was reported in April 2019 that Zvezda will not be able to use Russian-sourced ship screws for the 'Arctic-LNG2' gas carriers. These were one of the few components of the Korean-built gas carriers for Novatek's Yamal LNG project that were Russian-sourced, coming from the Zvezdochka plant. That plant is under US sanctions, as a result of which GE, the US half of the 'Sapphire' JV which is responsible for the new gas carriers' screw and steering components, will not allow Zvezdochka screws to be used, meaning they will have to be imported (vedomosti.ru/business/articles/2019/04/17/799346-general-electric-novateka).

Even without the specific pressure of sanctions, Zvezda appears likely to face the age-old issue of development based on technology imports: how to move beyond being an expensive assembly plant for complex inputs manufactured by foreign partners to having an independent and sustainably competitive technological capacity. One of the key drivers of the Zvezda project was to contribute to the socio-economic development of the RFE. In that context, there is something very Parshevian about the problems facing the project as identified by Patrushev: climate, logistics and personnel shortages (scrf.gov.ru/news/1034.html).²⁶ It might make sense to place a yard for servicing and repairing submarines on service in the Pacific Ocean in such a location; whether it makes sense to put yards for the Arctic shelf there, particularly when there is an existing capacity – of sorts – in the northwest is a different matter. That is a finding that reminds us of Hill and Gaddy's (2003) arguments about the Siberian curse – misguided policy choices that locate major manufacturing operations in places that are always going to struggle to be competitive.

We see the classic Russian/Soviet consequences of such choices: the struggle to find and keep personnel, and the need to build housing for them.²⁷ An equally classic Russian problem has already been noted: limited domestic demand for products that struggle to find foreign markets, and consequently difficulties with economies of scale. We see this in the struggle for orders, particularly multiple orders for a single design, and as a consequence the difficulty in arriving at competitive prices for Zvezda vessels.

²⁵ The talk of finding foreign markets for Zvezda's output is particularly pro forma. Fil'chenok said in 2017 that the domestic market was big enough for the moment and time was needed for the new yard to become competitive (dcss.ru/press-center/2017/Na-verfi-v-Bolshom-Kamne-trudoustroyat-svyshe-7500-chelovek/).

²⁶ Parshev (2002) attributes the highly centralized and authoritarian Russian approach to political and economic control to the country's inherent and unavoidable lack of competitiveness because of climate and size.

²⁷ Recruitment of trained personnel is a major problem which features in all official discussions to a degree which is not reflected in this paper. A small sense of the problems can be gained from Sechin's April 2019 report to Putin and a contemporaneous newspaper report (kremlin.ru/events/president/news/60195; fontanka.ru/2019/04/12/134/).

The indications are that one way or another Sechin will get the job done – the yard will be built and it will build ships. He will do so because of his own project management strengths and the support of Putin, but also because the weakness of opponents means that the project has been relatively free of the classic Russian problem of bureaucratic infighting. OSK and MPT have been ineffectual opponents; Novatek has put up a sterner fight – because it can bring commercial realities into the debate – but still appears likely to have to concede.

But as is so often the case regarding big Russian projects the question is not whether the job will be done, but whether getting it done is an adequate measure of success. A few quotations sum up the situation as well as the author's own words can.

Vedeneeva, in the final sentence of an article which makes essentially the same points as in the last couple of paragraphs, says: 'Zvezda's business model fits nicely into a state policy of development through coercion and subsidy (*prinuditel'no-l'gotnoe razvitiie*)' (kommersant.ru/doc/3408332).²⁸

The head of OSK in 2016 stated that 'in some segments it is hard for Russia to compete with China and South-East Asia as a whole. In those places, there is a different climate, different programs of state support, a different value of money, different linked funding instruments. If I said that we are able to build a tanker for the same price as in Guangzhou or Shanghai, then you would say I was fantasizing and correctly so. Our competitive advantage was always science, the capacity to do the impossible. And we will continue to go about it that way' (vedomosti.ru/business/characters/2016/05/09/640376-naverstat-cto-delalos).

One could argue that Russia has a long history of trying to do the impossible and falling short. It might be better advised to attempt the possible.

The background header for an interview with Security Council head, Nikolai Patrushev, following his visit to Zvezda in 2016, was, without any sense of irony, 'in terms of its size the new complex will be bigger even than those industrial giants which existed in the Soviet Union. ... As a fact our country will be able to create the world's first and most powerful Arctic fleet' (scrf.gov.ru/news/1034.html).

Those industrial giants were not without their achievements, but not everyone would see them as something to be emulated much less exceeded.

For another strong Soviet echo, the words of a Zvezda recruitment officer, after relating at length the difficulties of recruitment and his own occasional desire to return to his native St Petersburg: 'but it is interesting here, what will happen, what will come of our shipyard, which after all is our child. Here there is the unbelievable atmosphere of a living construction site. Everything is new and changes every day, and there's fire in people's eyes. You do not have to force people to work, everyone is pushing themselves to the limit' (fontanka.ru/2019/04/12/134/).²⁹

The Stakhanovite tone, whether or not a true description of the mood of the workforce, inevitably brings to mind the achievements but ultimate failure of the Soviet approach to things.

References

- Fortescue, Stephen. 2016a. 'Russia's "turn to the East": a study in policy making', *Post-Soviet Affairs*, 32, 5: 423-54.
- Fortescue, Stephen. 2016b. 'Russia's economic prospects in the Asia Pacific Region', *Journal of Eurasian Studies*, 7: 49-59.
- Fortescue, Stephen. 2019. 'The role of the executive in Russian budget formation', *Post-Communist Economies*, 29, 4: 523-537.
- Hill, Fiona and Gaddy, Clifford. 2003. *The Siberian Curse. How communist planners left Russia out in the cold*. Washington DC: Brookings Institution Press.
- Parshev, A.P. 2002. *Pochemu Rossiia ne Amerika*. Moscow: Krymskii most-9d.

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²⁸ Vedeneeva compares the Zvezda project to another Russian 'modernisation' project with an RFE development aspect, the SSJ100 airliner. It has experienced such serious commercial problems that it can surely already be declared a failure.

²⁹ He notes that Crimea is a good source of recruits because of poor economic conditions there.