



CIS PETROCHEMICALS

The participants of the ninth annual CIS Petrochemicals conference discussed industry recovery post-pandemic.

The main topics of discussion at the event were the road to recovery for the petrochemical industry post-pandemic and government economic support measures. Special attention was paid to the emerging decarbonisation trend in the industry and the digitalisation of petrochemical production.

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Global trends

Ksenia Karetina, Head of SIBUR's Analytical Centre, gave an overview of the global petrochemical market.

The service sector and developed economies with a large service (tertiary) sector were among the most hard-hit by the pandemic. In the petrochemical industry, the timelines for commissioning new production facilities were shifted and investment programmes were cut back. However, all these measures matched pace with dwindling demand.

Another challenge for oil refining is that global consumption of motor fuels has now plateaued and will be on the decline in the near future. This is coupled with wide-reaching restrictions on emissions coming into force around the world. To maintain demand, petrochemical plants will need to boost their naphtha yields from 12% to 19%. Yet, due to a simultaneous decrease in demand for fuel, the volumes of naphtha available will also fall. Consumption-wise, the new normal will force corporations to refocus on the production of biofuels, invest in new greenfield projects, modernise existing refineries and shut down inefficient capacity.



Ksenia Karetina's talk (<https://youtu.be/80pqgs6Ba-g>)

Sustainable development at SIBUR

Right now, the Russian petrochemical industry's agenda is dominated by the expectation of a widespread rollout of a carbon tax. Maxim Remchukov, Sustainable Development Director at SIBUR, went into more detail about carbon border adjustment. As the second-largest exporter of CO₂ to Europe after China, Russia will be one of the first to bear the brunt of the EU's new environmental agenda. Carbon regulation will drive a much heavier tax burden and force Russian producers to pivot to non-European markets. In turn, this will cause serious price fluctuations on the global market.

SIBUR'S SUSTAINABLE DEVELOPMENT MODEL PUTS A LOT OF WEIGHT NOT JUST ON DIVERSIFYING LPG AND RECYCLED PLASTIC FEEDSTOCKS, BUT ALSO ON CREATING PRODUCTS THAT USE BIO-BASED MATERIALS AND CO₂ AS INPUTS IN THE MEDIUM TERM

Maxim Remchukov outlined the measures that SIBUR is taking to address the new environmental agenda. At the end of 2019, the Company's Board of Directors approved SIBUR's 2025 Sustainability Strategy.

The Company has, among other measures, already introduced internal carbon pricing. As part of its climate action programme, SIBUR plans to increase the share of green energy in the Company's energy mix five-fold and reduce greenhouse gas emissions by 5% per tonne of production in gas processing and by 15% per tonne of product sold in the petrochemicals segment.

Under its Sustainable Product Portfolio programme, SIBUR plans a 50% increase in investment in R&D projects aimed at polymer waste recycling and the use of renewable feedstocks. The next step is chemical recycling. SIBUR scientists are developing the thermolysis of mixed plastic waste and the chemical recycling of polyethylene terephthalate (PET).

SIBUR's sustainable development model puts a lot of weight not just on diversifying LPG and recycled plastic feedstocks, but also on creating products that use bio-based materials and CO₂ as inputs in the medium term.




Maxim Remchukov's talk (<https://youtu.be/ZROs9JPCwMc>)

The future of isocyanates

Alexey Ioffe, Methylene Diphenyl Diisocyanate (MDI) Project Manager at SIBUR, delivered a talk on the Company's isocyanate progress. The Company launched R&D of this product in 2019: in just two years, SIBUR's R&D centre has improved upon existing Soviet technology and produced laboratory batches of isocyanate. The Russian scientists had to work under much more difficult conditions than their foreign colleagues, according to Mr Ioffe. They had to create their own test setup from scratch and attracted expertise from abroad.

The SIBUR team is now on the cusp of the most risky and expensive stage of the project – the development of a manufacturing demonstration facility. This actually involves building a fully-fledged plant, which calls for a location and the construction of a technology park from the ground up with raw materials and energy supply. If SIBUR is able to bring the state on board, it will be able to press ahead with technology trials at the manufacturing demonstration facility between 2022 and 2024, and construct an integrated MDI and TDI complex between 2024 and 2028. Then, if the project is successful, Russia will be able to produce 170 ktpa of MDI.





Демонстрационная мощность – самая рисковая и затратная стадия НИОКР

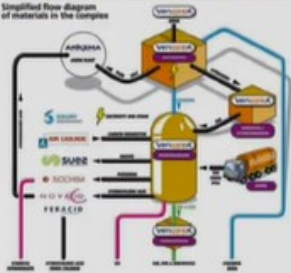
Существующие ограничения:

- Отсутствие инфраструктуры
- Привлечение зарубежных компетенций

Целевое видение:

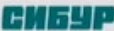
- Технопарк, инфраструктура
- Обеспечение сырьем, энергоресурсами
- Внутренние инженеринговые компетенции
- Корректировка мер господдержки


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Simplified flow diagram of materials in the complex

Grenoble Chemical Park: A "plug and play" organization around chlorine, phosgene and hydrogen expertise



Alexey Ioffe's talk (<https://youtu.be/C7JBcSb3SKc>)

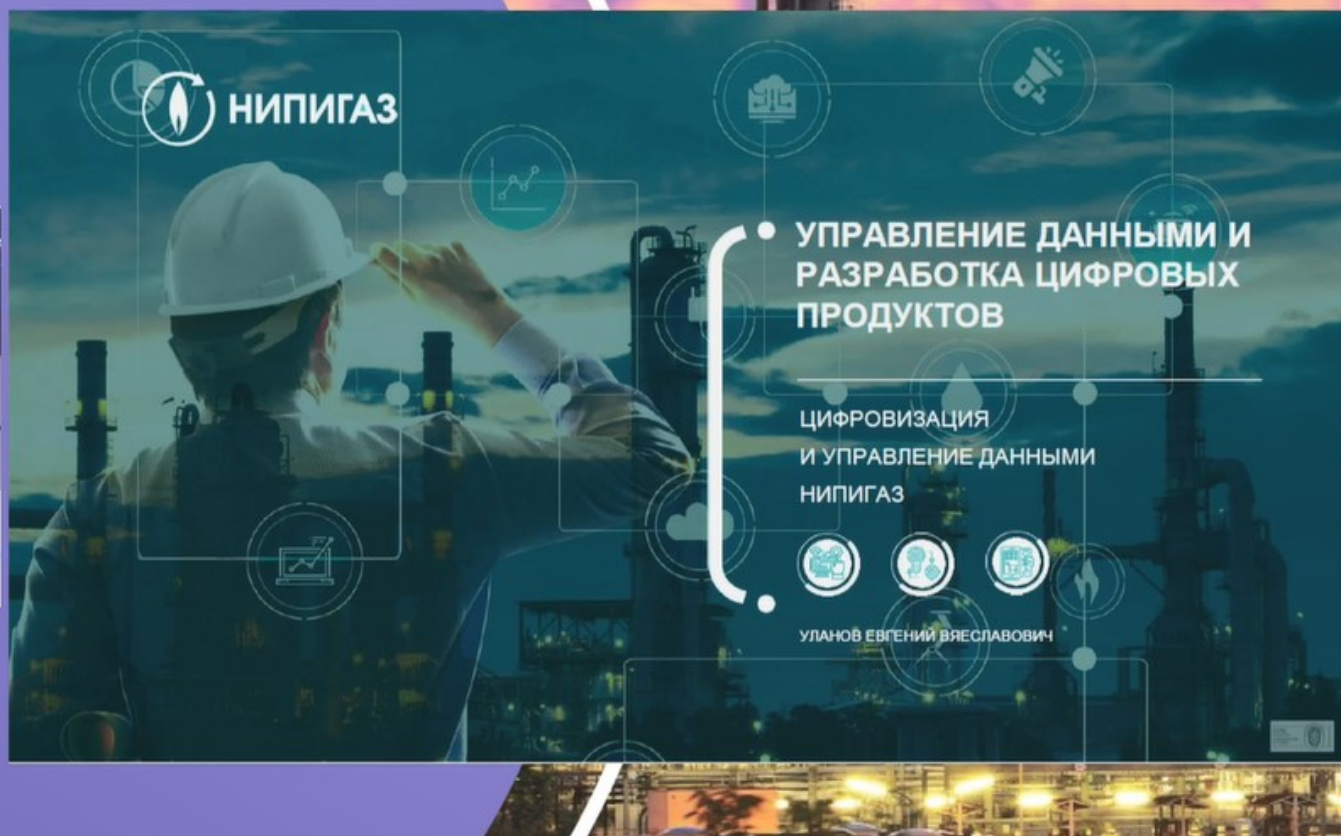
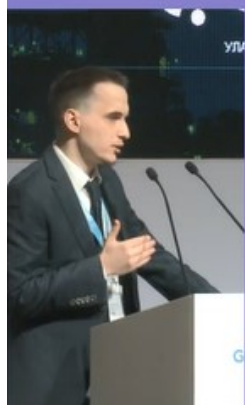
Taking the robot out of the human

Evgeny Ulanov, Head of Data Management at SIBUR, told the audience about how the Company is setting up a project management office for digitalisation.

Mr Ulanov cited several RPA solutions that free people up from tedious routine work that requires a lot of time and huge amounts of concentration.

One of these RPA solutions collects, analyses, and checks for inconsistencies in data from contractors' EP and CIW reports. The solution compares each digit in the document against the contracted procedures. This cuts down on additional expenses caused by human error and the misreading of databases.

Another solution manages product documentation. The contractor's system sends an email to the robot to tell it that the required set of documents has been prepared. The robot then runs analytics, going to the portal of the supplier documentation storage system and extracting all the necessary data before comparing them. It runs more than 200 different checks. It assigns a weighting to each discrepancy, generates reports on them, and automatically sends these reports out to contractors. Such a meticulous process would take 46 specialists and half an hour of work per person – the system can do it in less than a minute.



Evgeny Ulanov's talk (<https://youtu.be/AkujGUprSh8>)