JANUARY 2018

SOCAR Polymer Newsletter / Issue 1 / 2018

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13,138,186
Man-hours LTI Free

507
Employees

97.9%
PP Total progress in January

89.5%
HDPE Total progress in January

SOCAR POLYMER

A new year – a new start

Dear colleagues,

We have ushered in the new 2018th year. Having reviewed the achievements made and lessons learnt in the past we are turning our eyes towards the broad horizon ahead of us. Any new year is a new beginning, and to mark it, we are starting this year with new projects and initiatives that will take our company and country closer to our ultimate objectives. This month we are launching a new social and educational project aiming to inspire love for chemistry in our youths and, to this end, starting from school bench, to make our contribution into the development of the human resources pool for the chemical industry branch of domestic economy, and to expand SOCAR Polymer's conscientious presence in the development processes taking place across Azerbaijan.

Just like we are looking forward to a multiplication effect in the chemical industry, we shall encourage and promote a similar one in the adjacent fields. Having our interns pass down their passion for chemistry is viewed as starting a chain reaction of short- and long-term beneficial effect and sizeable value. Clusters that bring together production enterprises, transportation services, supply chains and business circles are encouraged not only in the economic, but also social and educational realms. SOCAR Polymer is willing to provide support in both development directions.

This month, first steps have been taken towards the implementation of our "Inspire the Youngest" project. Following the schedule and lesson plan agreed with the Baku Education Department of the Education Ministry, the project team has already visited one of the Baku schools for a debut lesson, and encouraged by the achieved results shall carry this initiative on.

Let's make this year a productive one in many ways!

Farid Jafarov

January 2018

Site Photos

PROGRESS ON SITE DURING JANUARY

HDPE plant

December 2017	Progress over January 2018	January 2018
	HDPE: Blending Silos. Instrument cabling in progress	
	HDPE: Organoleptic Structure and Effluent Treatment. SS erection and cable tray installation ongoing	

December 2017	Progress over January 2018	January 2018

HDPE: Extrusion Structure.
RCC works completed. SS and piping erection in progress

HDPE: Polymerization.
Equipment erected. Piping & Support erection ongoing. SS, junction box, lighting etc. installation in progress

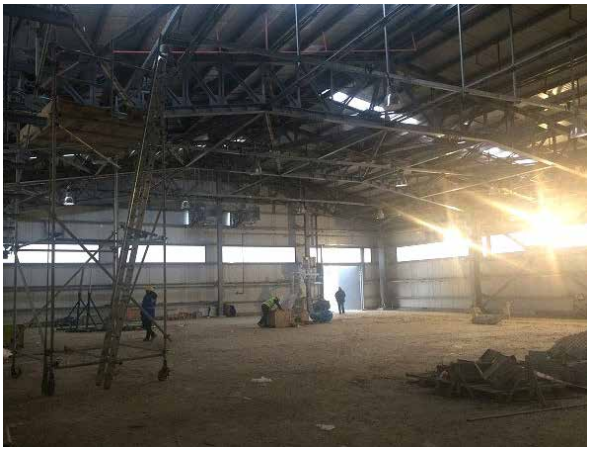
HDPE: Electrical Substation.
Rack room HVAC panels' cable connection, and instrumentation panels' cabling ongoing

HDPE: Polymerization Pipe Rack.
Pipe support installation ongoing. Cable tray installation ongoing. Cable pulling in progress

December 2017	Progress over January 2018	January 2018
	HDPE: Pellet blower package space for logistic conveying. Pipe erection in progress	
	HDPE: Reactors Dump tank. Electrical works in progress	
	HDPE: Catalyst Activation. SS erection in progress	

December 2017	Progress over January 2018	January 2018
	HDPE: Bagging & Packing. SS erection in progress	
	HDPE: Low Pressure Solvent Recovery. SS erection in progress	

PP plant and U&O area

December 2017	Progress over January 2018	January 2018
	PP/U&O: Electrical substation. Complete energization activity in progress	
	PP/U&O: Common Control Room. Pre-commissioning activities in progress	
	PP/U&O: Chemical & Additives Storage Building. Most roof sheeting works completed	
	PP/U&O: Laboratory. Most finishing works are completed	

December 2017	Progress over January 2018	January 2018
	PP/U&O: Administration building. Most finishing works ongoing completed	
	PP/U&O: Workshop. Most finishing works completed	
	PP/U&O: Bagging & Packing Building. Wall and roof sheeting installation in progress	
	PP/U&O: Fire water Retention Basins and Pump House. Pre-commissioning in progress	

PP/U&O: Air/HP Nitrogen Condensate Compressor Station's Storage & Pumping facilities.
Pre-commissioning in progress

PP/U&O: Cooling Tower.
Pre-commissioning activities in progress

PP/U&O: Flare Stack.
Pre-commissioning activities in progress

December 2017	Progress over January 2018	January 2018
	PP/U&O: Valve house. Finishing works completed	
	PP/U&O: Gate/ Guard House. Repair works in progress	
	PP/U&O: PP-Wet section / Polymerization. Equipment testing in progress. Installation of electrical instrumentation ongoing. Piping test in progress. Branch cable tray installation in progress	
	PP/U&O: PP Dry Section / Extrusion building. Most piping tests completed. Lighting System installed and powered up. Lift erection in progress	

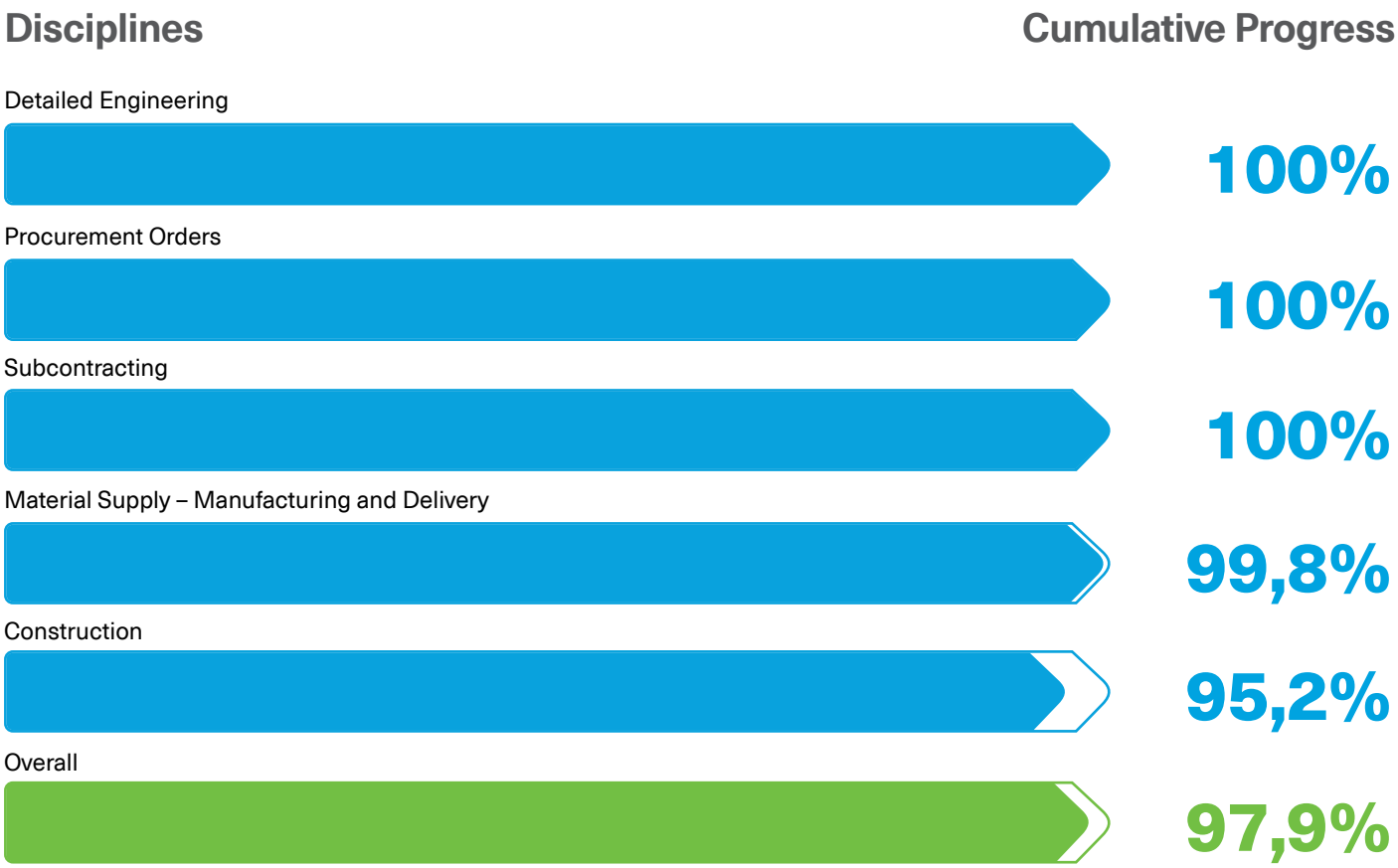
December 2017	Progress over January 2018	January 2018
	PP/U&O: PP Dry section / Powder Silos. Pre-commissioning activities in progress	
	PP/U&O: Homogenization / Blender Silos. Pre-commissioning activities in progress	
	PP/U&O: Raw Water Storage Tank. Pre-commissioning activities in progress	

December 2017	Progress over January 2018	January 2018
	PP/U&O: Isobutane Sphere. Sprinkler system installation completed	
	PP/U&O: Interconnecting Pipe Racks. Pipe testing in progress. Cable pulling ongoing	
	PP/U&O: Pipe Sleepers. Pipe erection and cable tray installation ongoing	

December 2017	Progress over January 2018	January 2018
	Nitrogen package. Pre-commissioning activities in progress	
	Warehouse. Repair works in progress	
	Roads. Internal roads' construction ongoing. Laying of the first asphalt layer ongoing. Area lighting works in progress	

Project progress status

PP Plant Progress



HDPE Plant Progress

Recent quotes about SOCAR Polymer

President of the Republic of Azerbaijan Ilham Aliyev attended the opening and groundbreaking ceremonies of new facilities in the Sumgayit Chemical Industrial Park

The Head of State participated in the ceremonial breaking of the ground for the construction of a pesticide plant, glass production plant, wool spin-dyeing factory, and tobacco factory, as well as cut the ribbon at the opening ceremonies of the newly established Data Center, non-ferrous metals & ferroalloys plant, hose and fittings plant, fiber cement plant, and the lubricant plant.

“Today, a number of production facilities are put into operation in the Sumgayit Chemical Industrial Park, while a few others enter the construction phase... As you see, within just one day seven enterprises are given impetus for secured operation in Sumgayit. If we add here the other residents of the Sumgait Chemical Industrial Park, we will see that it is indeed a huge industrial hub on a global scale. The SOCAR Polymer and carbamide plants are currently under construction. The total investment into these two projects amounts to USD$1.7 billion. Thus, we shall both secure local production and local raw material supply, and create vast opportunities for export".

Mr. Ilham Aliyev
President of the Azerbaijan Republic

At a meeting with the Sumgayit City community representatives
16 December 2017

President Ilham Aliyev attended a conference on the 4th implementation year outcomes of the 2014-2018 State Program for Regional Social and Economic Development

"This year will see opening of a number of significant industrial production facilities, among which I would like to mention the enterprises in the Sumgait Chemical Industrial Park. Late in the past year, the opening of four enterprises and groundbreaking of three others took place in the Park. The number of residents of the Sumgait Chemical Industrial Park has reached fifteen, with the amount of investment at $2.7 bln. This project and great initiative once again demonstrates what a correct policy we are pursuing. Had we not cleaned the territory from decayed and corroded metal, had we not initiated subsequent initiation of infrastructure projects across hundreds of land hectares, had we not created the existing conditions, no one would have invested a single manat in this land, unlike today, when $2.7 bln worth investment made therein is just the beginning. This is what a State's duty and correct policy is about. We create favourable conditions, provide assistance and make investments to encourage the private sector and foreign companies to follow suit. Therefore, I consider the establishment of the Sumgait Chemical Industrial Park a remarkable success of ours. And for this year, the opening of the SOCAR Polymer and fertilizer plants is planned. These two enterprises will not only fully satisfy the domestic demand but also provide vast export opportunities. The aggregate export capacity of these two plants will amount to hundreds of millions of dollars a year. At the same time, the SOCAR Polymer plant in particular will give impetus to the development of small and medium-size enterprises. because its products will be used as feedstock to manufacture end products in Azerbaijan. Polymers are such products that are nowadays involved in the manufacturing of many a household or industrial material. So, the private sector, too, must stay alert: as soon as the plant starts running, local industrial production must be established.".

Mr. Ilham Aliyev
President of the Azerbaijan Republic

Conference at Heydar Aliyev Centre
29 January 2018

Successful energization of the Nitrogen Generation plant

On Friday, 19 January 2018, SOCAR Polymer's site team reported that power had been supplied to the 3720-ESW06 switchboard located at the Switch Room located at the Nitrogen area.

KT (Kinetics Technology) had pulled 10 cables from the Common Substation to the Nitrogen area where they were coiled for termination in the future when the Nitrogen Generation plant contractors (the Encotec Ltd team) is ready to accept them. Under the supervision of the Cryogenmash team, the Encotec team of engineers and technicians completed the installation of the Switch Room, Switchboard, and cable terminations, conducted the inspection and testing activities on their side of the "Battery Limit", as well as performed the subsequent clearance of all punch-list items to ensure safe energisation.

Upon receipt of an "Energisation Request", SOCAR Polymer's site team and our main contractor Kinetics Technology set wheels in motion to supply power. Accomplished safely and efficiently, it is a significant milestone as SOCAR Polymer had set a target to support the commissioning activities by Cryogenmash who have now begun the commissioning of the Nitrogen Generation area.

Special credit for this bit of team success goes to SOCAR Polymer's Electrical Engineer Ruslan Amirov and Fluor's General Construction Superintendent Kevin Coyle, for their extensive contribution into the timely accomplishment of the task.

On Friday, 19 January 2018, SOCAR Polymer's site team reported that power had been supplied to the 3720-ESW06 switchboard located at the Switch Room located at the Nitrogen area.

A visit to BCC Industrial Park

On January 21-25, the Engineering Manager Rufat Guliyev and Senior Process Engineer Matin Huseynli travelled to the city of Urmond in the Netherlands to represent SOCAR Polymer LLC at an event held by Brightlands Chemelot Campus (BCC), which, established in 2012 and operating under the "Knowledge crossing borders" slogan, is internationally known as a leader in innovations and application of innovative and sustainable materials. Located at the largest petrochemical facility in the south of Netherlands, BCC is heavily involved in chemical process engineering research and scale-up, and is an organization that is very active in attracting new businesses, encouraging cooperation between companies and initiating contacts with the outside world.

The delegation from Azerbaijan also comprised SCIP representatives, namely Elkhan Shiriyev – Head of Investor Relations and Business Support Department, Ayaz Allahverdiyev – Senior Specialist of Investor Relations and Business Support Department and Aynura Ismayilova – the Deputy Director of the Institute for Scientific Research on Economic Reforms under the Ministry of Economy of the Republic of Azerbaijan.

On the 1st day of the event, January 22, the participants were welcomed by Maurice Lambriex who expressed the goals of the program, introduced the key participants, and conveyed the safety guidelines. The CEO of BCC, Bert Kip described the concept, developments and trends in Research & Development at BCC. Marnix van Gurp from the Brightlands Materials Center spoke about the developments in polymers, plastics in applications, additives, composites and research lines of BMC. The Program Manager, Menno Smeelen and the BCC Managing Director Leon Klinkers made presentations on "Application domains" and "Innovation Factory: The startup ecosystem". At dinner on the same day, the participants and hosts of the event brainstormed on the topics for future cooperation between Azerbaijan companies and BCC.

An industrial park in South Limburg and a unique chemistry and materials site, Chemelot is of strategic importance for many of its resident-companies. It is a growth engine for the entire region. Chemelot's ambition is to become the most competitive and sustainable materials and chemicals site in Western Europe by 2025 by focusing on further cost reduction and multiple sustainability transitions through optimization of production processes and products. In order to guarantee the importance of Chemelot for future generations, the large companies at Chemelot (SABIC,

OCI Nitrogen, Arlanxeo, Fibrant, AnQore and DSM) and the growing Brightlands Chemelot Campus joined forces with the on-site service companies Sitech and USG in the stakeholder team Chemelot 2025.

On the 2nd day of the event, January 23, the Managing Director of Chemelot, Robert Claasen spoke on ways to manage and develop an industrial park. Following visits to the Chemelot InSciTe Innovation and Learning Labs (CHILL) and to a Multi-purpose pilot plant (W.Ludema), the participants were informed of the latest developments in (bio)materials and biobased products. During the visit to the technology platforms at BCC, additive manufacturing and 3D printing were discussed. The last presentation of the day was on “What the Brightlands eco-system can offer you”.

At dinner, the Azerbaijan delegation met with the representatives of the Province of Limburg, including the deputy Economy and Knowledge Infrastructure for the Province of Limburg – Twan Beurskens and the representative of AZ Hub in the Netherlands – Elwin Hulscher.

On the last day of the event, January 24, the participants visited the Sitech Asset Health Center, where the topics of predictive maintenance, exhaust measuring, engineering and debottlenecking were discussed. In conclusion of the event, the participants worked together on potential business cases and decided on topics for cooperation to be elaborated more in detail in the future.

Having broadened their vision and enriched the best-practice-examples portfolio, the Azerbaijan delegation returned to homeland to try and make best use of the newly gained experience.

> Marnix van Gurp from the Brightlands Materials Center spoke about the developments in polymers, plastics in applications, additives, composites and research lines of BMC.

OPS Trainings

OPS (operations) trainings are offshore/onshore trainings conducted for SOCAR Polymer's operation/maintenance/ laboratory staff to expand their theoretical knowledge and practical skills regarding the technical aspects of operating/maintaining various types of equipment/ facilities installed at the PP plant. Trainings are arranged by Tecnimont, SOCAR Polymer or Fluor, and are delivered at vendors' facilities abroad or at appropriate institutions in Azerbaijan.

In the month of January, SOCAR Polymer employees attended the following training abroad:

OFFSHORE TRAININGS	
Training theme	**Ethylene booster compressor**
Company/Location	Dresser-rand India Private Ltd. Suarat, India
Duration	5 days
Dates	29 Jan - 02 Feb
Participants' positions	3 mechanical technicians, 2 shift supervisors and 1 process engineer
Participants' names	Kamran Gurbanov Royal Alekberli Ramil Hajiyev Vugar Alakbarov Emin Demirov Asif Mammadov

On-the-job training sessions at the SOCAR Polymer plant site

The EPC contract with the Tecnimont company includes trainings which the Kinetics Technology (KT) company has provided on daily basis since 28 August. The extensive Training Program scheduled for the period from August 2017 till mid-February of 2018 covers all aspects of plant operations and envisages both Classroom training (480 hours total) by various specialists and vendors, and On-job training (1050 hours total) to be led by experienced technicians until the end of the project to ensure complete grooming of SOCAR Polymer operators to efficiently handle the Plant. The trainings are listed under four major disciplines/categories: electrical, instrumentation, mechanical and operation. Thus, the SOCAR Polymer plant personnel gets a better understanding of the principles of equipment operation, and grows better informed of the basic maintenance and troubleshooting processes.

More detailed information on some of the training sessions conducted on site in January is provided below:

Training title	Duration	Dates	Participants' positions
Working at height	1 day	23 Jan	28 operators, 3 bagging operators, 5 HSE advisors, and 4 shift supervisors
		24 Jan	15 operators, 14 mechanical technicians, 6 electrical technicians, 2 maintenance technicians, and 1 mechanical shift supervisor
HDPE Technology	1 day	17 Jan	12 operators, 2 process engineers, 2 supervisors, and 2 mechanical technicians
		18 Jan	11 operators, 2 process engineers, 2 supervisors, and 2 mechanical technicians
		19 Jan	12 operators, 2 process engineers, 2 supervisors, and 2 mechanical technicians
		24 Jan	13 operators, 2 process engineers, 2 supervisors, and 2 mechanical technicians
		25 Jan	12 operators, 2 process engineers, 2 supervisors, and 2 mechanical technicians
		26 Jan	9 operators, 2 process engineers, 2 supervisors, and 2 mechanical technicians

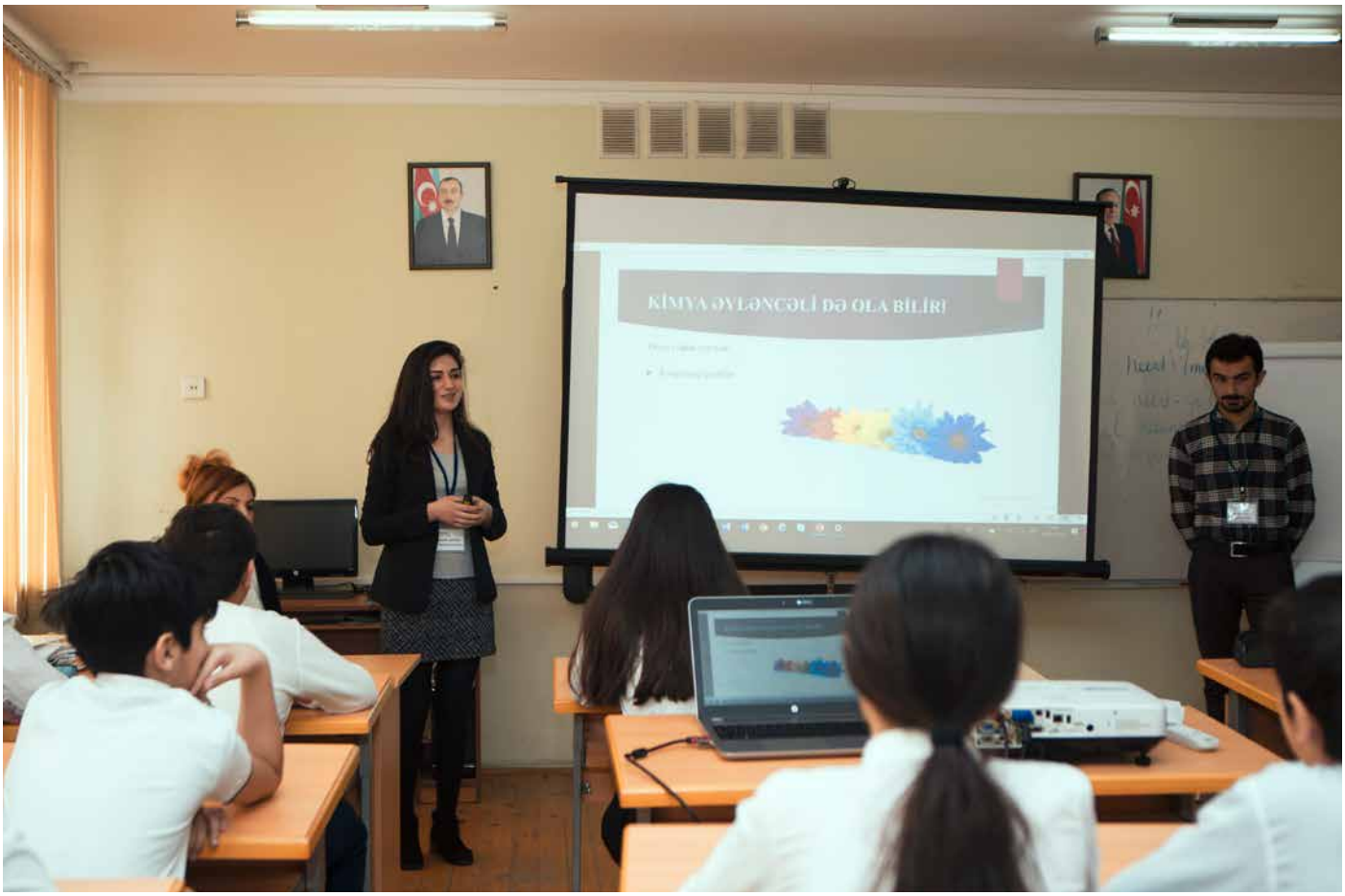
The Netherlands' ambassador visited SOCAR Polymer's Plant

On 23 January 2018, the Ambassador of the Kingdom of the Netherlands, Onno Kervers accompanied by his Senior Trade Adviser Gunel Mahmudova visited SOCAR Polymer's construction site. The guests were received by the Project Manager (from the PMC company – Fluor) Guy Lombarts, the General Construction Manager, John Arrowsmith, and the PR Specialist of SOCAR Polymer, Ilaha Hajiyeva.

The guests expressed interest in possible cooperation opportunities between the industrial sectors of the two countries. Mr.Lombarts presented information on Fluor's role in the project, demonstrated two short presentation movies that described the SOCAR Polymer company's current and future ambitious projects, and spoke of the achievements made to date. Mr.Arrowsmith gave information on the current status of the construction works at SOCAR Polymer's industrial site in Sumgayit, outlined the main principles adhered to in the company, regarding the continuous development of the local labour-force in general, including operator trainings, internship programs, English language classes, etc. Having been previously employed in Romania, Slovakia, Poland, Russia and other countries, Mr.Arrowsmith positively noted that, from the educational point of view, Azerbaijan is some 25 years ahead of some other former Soviet republics he had worked in before.

Following an interesting and animated discussion, the meeting participants donned PPE to make a tour round the plant area, taking advantage of the good weather.

SOCAR Polymer “Inspiring the Youngest”



This month SOCAR Polymer launched a new outreach initiative, Inspiring the Youngest, targeting schoolchildren in grade seven, who have just embarked on studying chemistry.

The idea to initiate the “Inspire the Youngest” project stemmed out of the Action Plan for the implementation of the “State Program on the development of industry in the Republic of Azerbaijan in 2015-2020” signed by President Ilham Aliyev on 26 December 2014. Among the main objectives of the state program was “improvement of human resources and promotion of science” (item 5.4) and “bringing the HR development processes in education facilities into conformity with the demands of the labour market” (item 5.4.5). The implementation of activities under this state program was assigned to the AR Ministry of Education, with instructions in the Action Plan to involve private industrial companies.

Thus, to make a contribution into the implementation process of the state program, the PR department of SOCAR Polymer met with the representatives of the Baku Education Office of the Ministry of Education to agree upon the content and select schools for the test run.

Led by the PR Manager Sona Ramazanova, the project team comprised the PR department specialists Ilaha Hajiyeva

and Yelena Gaisina, as well as the Jr.Process Engineers Nizam Zahidli and Sevinj Gafarli. Technical assistance was provided by the IT Support Manager Adalat Muslumov and IT specialist Chingiz Balabayov.

It took several meetings of the project team to write up a lesson plan based on the brainstormed ideas for chemistry-related subtopics to be covered or touched upon, to agree on the content, design and sequence of slides in the Powerpoint presentation, and to rehearse for better timing and fine-tuned teaching approach. The primary objectives in content-selection were outlined as:

- emphasizing the relevance to life and practical value of the knowledge gained through chemistry,
- presenting the science to kids as something fun rather than boring,
- introducing the notion of organic chemistry, and polymers in particular, to spark an interest in the opportunity to pursue studies in this direction and contribute to the development of the chemical industry in Azerbaijan

To make a stronger impression on the schoolchildren, the team decided to put the secondary school attended by Sevinj Gafarli on the target venue list. Thus the project was debuted at public school 244 in the Binaqadi district of Baku. The SOCAR Polymer team was introduced to the schoolchildren of class "7a" by Sevinj Suleymanova, the Vice-Principal on Educational and Disciplinary Issues, who emphasized that one of the guest speakers was a 2013-year graduate of the same school and encouraged the children to follow in her steps to become a well-educated school-leaver who scored 99.3% at the university entrance exams and was selected for the

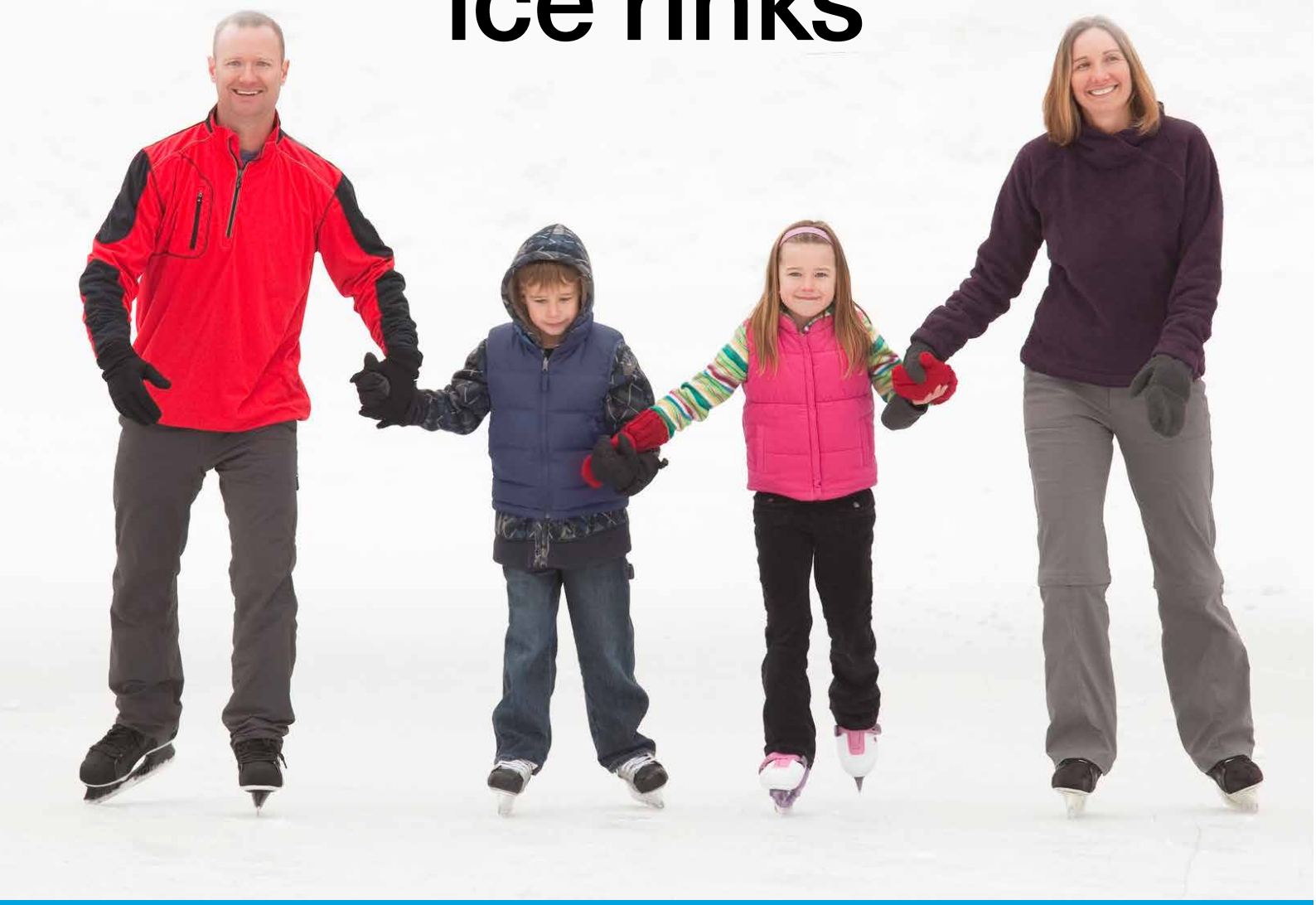
> The idea to initiate the "Inspire the Youngest" project stemmed out of the Action Plan for the implementation of the "State Program on the development of industry in the Republic of Azerbaijan in 2015-2020" signed by President Ilham Aliyev on 26 December 2014.

position of a Jr. Process Engineer at SOCAR Polymer at the age of 21. The children listened with interest and the electronic presentation evoked some questions, particularly regarding the fun and entertaining part of the chemical science. Most active during the Q&A interactions was Ismayil Sadikhzadeh, who demonstrated genuine interest in chemistry and turned out to have personally experimented slime-making. The presentation and discussions took about an hour and it was pleasant to see children ignite with interest and curiosity.

Following the success of its debut, the project shall continue to cover 3 more public schools in the Garadagh and Yasamal districts, and one private school in Baku, in accordance with the preliminary plan.

The project team is looking forward to bringing more smiles and inquisitive expressions to the faces of schoolchildren to inspire them for science.

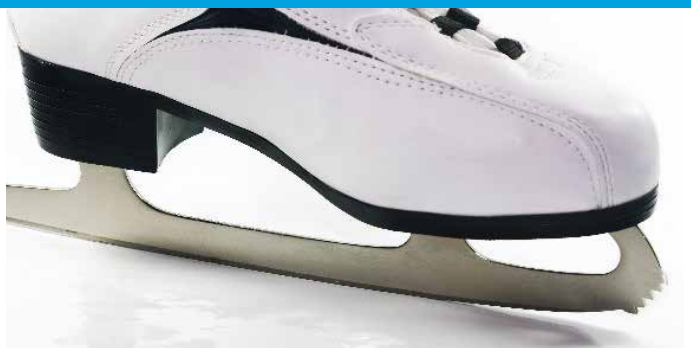
Scaters enjoy polymer ice rinks



With polymer ice rinks any season of the year can begin to look like winter – all because of the traditional winter activity that is now accessible any time. It is no joke, as ice rinks are nowadays made of a high-density polymer that looks and feels like ice.

Ice skating, sled riding and dozens of on-ice games are the activities that draw thousands of folks to all-weather indoor/outdoor synthetic skating surfaces.

Unlike real ice, polymer skating rinks do not require negative temperatures, so, parents can bravely bring small children for their first-time skating fun experience without fear of them catching a cold. The cost to skate on “polymer ice” is around $5 and includes skate rental – 2 to 4 times cheaper than skating on real ice.



Synthetic ice

Synthetic ice is sometimes called artificial ice, but that term is ambiguous, as it is also used to mean the mechanically frozen skating surface created by freezing water with refrigeration equipment. Synthetic ice is a solid polymer material designed for skating using normal metal-bladed ice skates. The most common material used is HDPE (high-density polyethylene), but recently UHMW-PE (ultra-high molecular weight polyethylene) is being used by some manufacturers. This new formula has the lowest coefficient levels of friction at only 10% to 15% greater than real ice.

Rinks are constructed by interlocking panels.

The first known application of plastics as a substitute for ice for the purpose of ice skating was in the 1960s using materials such as polyoxymethylene plastic, which was developed by DuPont in the early 1950s. The polymers used at the time had some significant shortcomings.

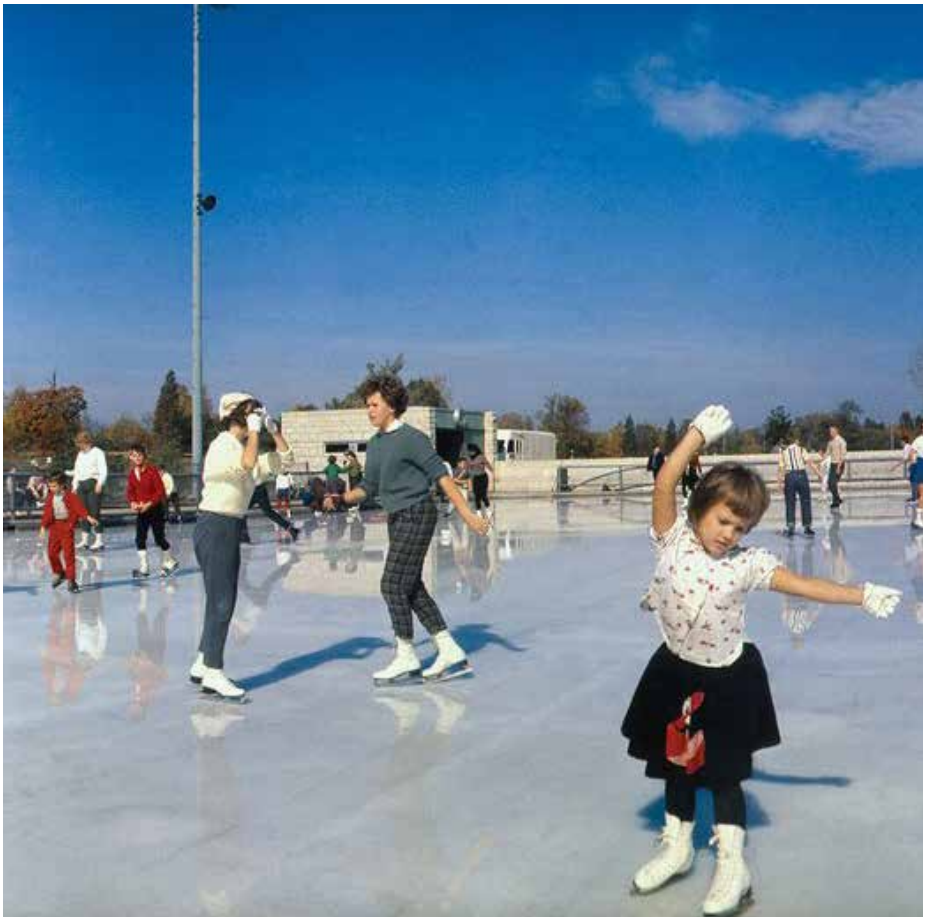
In 1982, High Density Plastics launched the first full-size synthetic skating floor under the trade name of Hi Den Ice. The surface was made of interlocking panels of high-density polyethylene which became an ice rink when sprayed with a gliding fluid. The surface needed to be cleaned off and resprayed once a month. In a dry form, the panels were also usable for other indoor sports.

Research and development in the field of synthetic ice has improved its skating characteristics. Unique lubricants have been designed to work with polymer and be absorbed by it for a less sticky surface providing an ice-like glide. Smoothness between panels at seams has been improved by ameliorations in production and assembly methods. It is estimated that synthetic ice has 90% of the glide factor of natural ice.

- used where frozen ice surfaces are impractical due to temperatures making natural ice impossible
- good for training resistance, as it requires more effort to skate
- used as an alternative to artificial ice rinks due to the overall cost, not requiring any refrigeration equipment

- produces shavings and abrasions
- requires more effort to skate, and skaters miss out on the fun of effortless skating
- wears out skates much faster

Family fun and fitness: ice skating



Ice-skating is an increasingly popular way to work out in the winter. With proper training, you can learn the right technique to avoid injury and maximize your aerobic workout. Even if you aren't adopting ice-skating as your winter fitness routine, a trip to the rink with your family is a great way to get outside and exercise while also having fun.

Ice-skating can keep your whole family active and engaged, more so than other winter sports. Fairly inexpensive and open to all levels, it allows you and your kids to skate in one place without the skill separation other activities can create. With different styles like figure skating and speed skating, everyone can pursue their interests within the bounds of the rink. By working small stabilizer muscles and improving coordination, you may notice that the benefits of this winter activity extend past the season.

Ice skating is fun, family-friendly, and also a perfect way to spend a romantic winter day or night. So, when presented a chance, grab your skates (or rent some) and enjoy!

Ice-skating trends in Azerbaijan

There are several sites in Baku that offer skating on natural ice rinks, skate rental, lockers, experienced trainer services, and the comforts of a warm café – all to musical accompaniment. The Officers' Park and some entertainment centres like Megafun compete to make guests' leisure time most exciting and memorable. Though residents of a predominantly warm and sunny country, Azerbaijanis take live interest in active sports, and the city ice rinks are quite popular.

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