PGPIC's Journey Toward Sustainable Development

Since the introduction of the Sustainable Development Goals (SDGs) in 1992, governments and, consequently, businesses across the world have sought solutions to reconcile economic growth with the principles of sustainability. A deeper understanding of these goals has led to significant transformations in business models to ensure that economic development aligns with sustainable practices.

At the Persian Gulf Petrochemical Industries Company (PGPIC), the 17 Sustainable Development Goals have been embraced as guiding principles embedded across all operational and strategic processes.

Despite the obstacles and constraints imposed by international economic sanctions, PGPIC has continuously strived to advance development by aligning with global best practices in sustainability. This commitment is reflected in a wide range of initiatives, including:

- **Strengthening domestic capabilities** to support national resilience,
- **Contributing to economic stability and improving livelihoods**,
- **Injecting foreign currency into the domestic economy** through exports,
- **Fostering a competitive business environment**,
- **Job creation and human capital development**,
- **Appointing and empowering local talent** in executive and operational roles,
- **Establishing development infrastructure for local communities** in special economic zones,
- **Ensuring equality and eliminating gender and ethnic discrimination** in recruitment and leadership appointments,
- **Treating and reusing industrial wastewater** within production cycles,
- **Developing policies to generate water from renewable marine sources** and utilizing treated municipal wastewater in production processes,
- **Designing and executing decarbonization projects** to combat climate change, and
- **Facilitating the export of products** in alignment with international market standards.

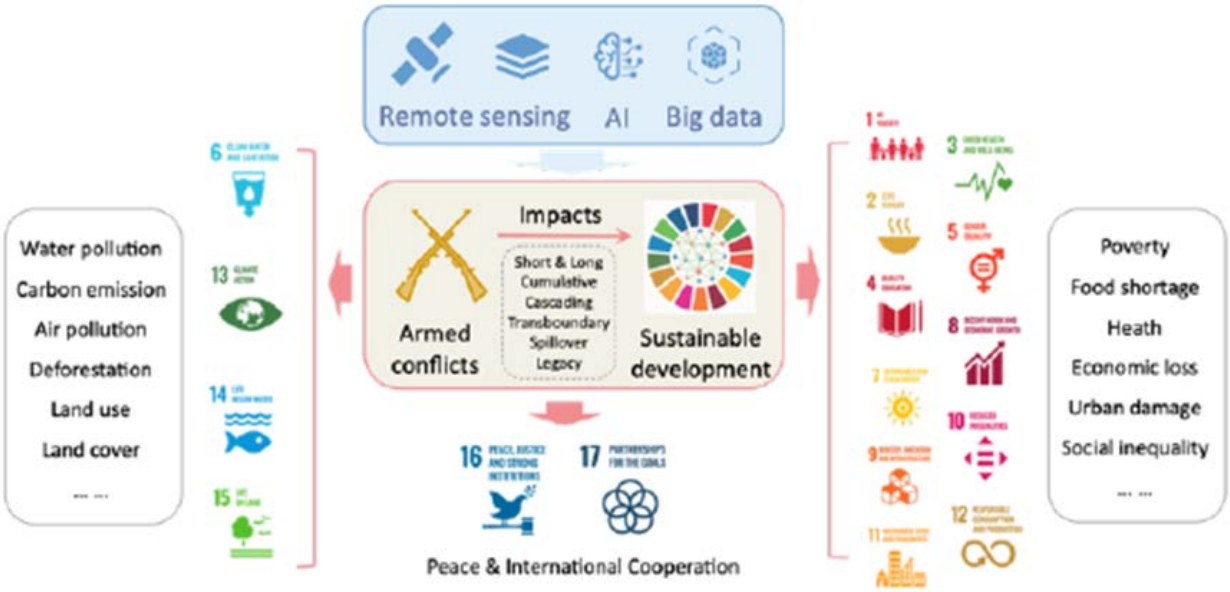
These efforts, driven by the dedication of competent managers and hardworking personnel, along with continuous engagement with shareholders and stakeholders, embody PGPIC's unwavering commitment to sustainable development and to building a better future for both the global community and our beloved Iran.

Sustainable Development and War

The relationship between war and sustainability is complex and deeply intertwined. While war inflicts devastating consequences on the environment and human well-being, sustainable development practices can contribute to building a more peaceful and resilient world. Addressing the root causes of conflict and promoting sustainable development are essential steps toward creating a more just and enduring future for all.

War significantly hampers sustainability efforts by damaging ecosystems, placing pressure on natural resources, and disrupting social and economic structures. In contrast, sustainable practices can play a pivotal role in preventing conflict and fostering peace by tackling root causes such as resource scarcity and social inequality.

Water contamination, emissions and air pollution, increased greenhouse gas output, deforestation, poverty, hunger, famine, declining health and hygiene standards, economic downturns, social disruption, inequality, humanitarian crises, and the absence of international community engagement and humanitarian action—these are among the many challenges that threaten the path to sustainable development.



PGPIC's Measures to Safeguard Sustainability During Conflicts

The war in Ukraine has served as a stark reminder of the profound impact armed conflicts can have on the 17 Sustainable Development Goals (SDGs) and the environment—offering critical lessons for governments and industries alike. The destruction of ecosystems, contamination of water resources, restricted access to energy, poverty, damage to infrastructure, harm to human life and settlements—these are only a few of the far-reaching consequences of failing to realize the SDGs.

In response to such realities, the Persian Gulf Petrochemical Industries Company (PGPIC) has adopted a proactive strategy to preserve sustainability in times of war and conflict. Central to this approach is the **identification of potential wartime risks** and their **impacts on facilities, infrastructure, personnel, and production**—followed by the **development and implementation of short-, medium-, and long-term mitigation actions**. Key risks and corresponding actions include the following:

- **Development of a Business Continuity Plan (BCP):**
  A comprehensive strategy that outlines how to maintain or quickly resume critical production operations during and after a disruptive event. As a preventative document, it defines response and recovery procedures for various disturbances such as natural disasters, cyberattacks, or supply chain disruptions. The primary goal is to **minimize operational downtime, protect personnel and assets, and reduce financial and reputational damage**.
- **Establishment of a Disaster Recovery Plan (DRP):**
  This plan anticipates potential crisis scenarios, outlines response protocols, ensures data backups, and assigns clear responsibilities during emergencies. Proper execution of the DRP helps maintain the continuity of essential operations

with minimal interruption and ensures that customer services remain stable and reliable.

- **Implementation of Preventative Measures in Line with Emergency Response Protocols (ERP):**
  In alignment with international and national safety standards, tailored ERP guidelines have been developed for each production unit, based on the nature of their chemical products. These measures aim to prevent explosions, chemical spills, toxic leaks, and the release of hazardous gases in emergency situations.
- **Human Capital Considerations:**
  PGPIC prioritizes its workforce during crises by facilitating remote work environments, issuing early salary payments, enhancing employee training, and raising awareness of emergency procedures.
- **Deployment of Preventative and Protective Systems:**
  Installation of risk mitigation technologies and safety systems across facilities in accordance with national and global regulations to proactively address potential hazards.
- **Crisis Management Readiness:**
  Activation of fully prepared crisis response teams across all subsidiary companies to ensure rapid and coordinated action during emergencies.

In line with global best practices, one of the most strategic sustainability initiatives during wartime involves ensuring access to **renewable energy sources** in scenarios where conventional energy supplies may be disrupted. To this end, PGPIC has established **Persian Gulf Renewable Energy Company** and has approved the development of **5,000 megawatts of solar and wind energy capacity**—marking one of the most significant environmental projects undertaken to ensure long-term sustainability and energy resilience.

Air Pollutant and Emissions Management

Greenhouse Gas Emissions

In accordance with IPCC guidelines and directives issued by the Ministry of Petroleum, greenhouse gas (GHG) emissions are calculated on an annual basis in terms of **CO_2-equivalent**. These calculations have been conducted for three consecutive years using the **PICARS software**, as mandated by the Ministry of Petroleum.

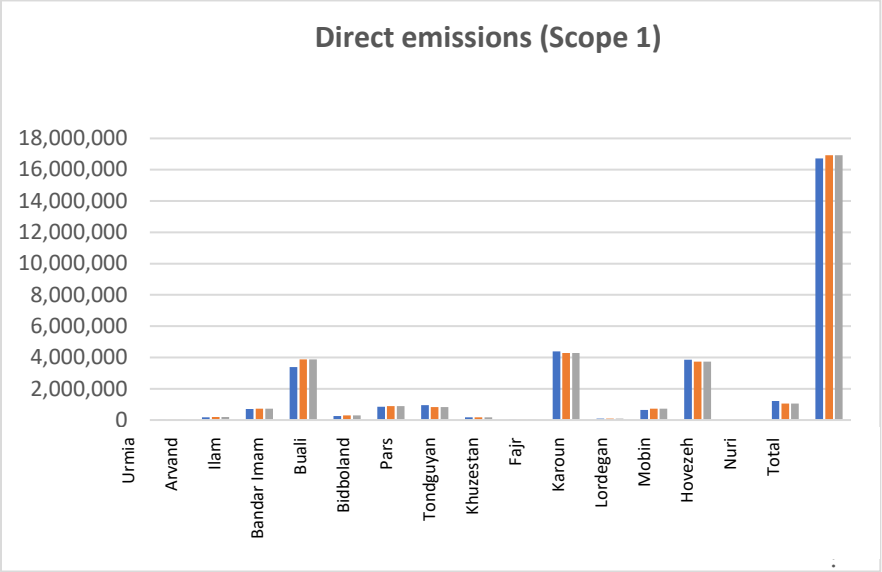
Emissions are reported under two categories:

- **Direct emissions (Scope 1)**
- **Indirect emissions (Scope 2)**

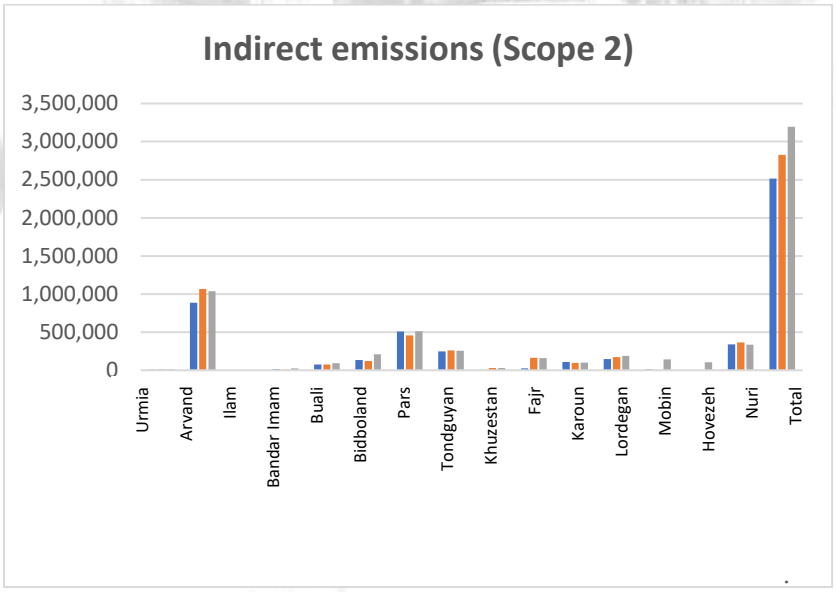
The methodology excludes **Scope 3 emissions**, which encompass other indirect emissions along the broader value chain.

The reported figures represent the **sum of Scope 1 and Scope 2 emissions**. The majority of direct emissions stem from **combustion processes**, while indirect emissions are exclusively attributed to **electricity consumption**, sourced either from internal utilities or the national power grid.

As new production units have come online and overall output has increased, a corresponding rise in total emissions has been observed.



Direct Emissions of the Group's Production Companies (in metric tons of CO_2-equivalent) for the Years 2021 (Blue), 2022 (Orange), and 2023 (Gray)



Indirect Emissions of the Group's Production Companies (in metric tons of CO_2-equivalent) for the Years 2021 (Blue), 2022 (Orange), and 2023 (Gray)

Emission Reduction, Carbon Strategy, and Offset Mechanisms at PGPIC

At the Persian Gulf Petrochemical Industries Company (PGPIC), annual greenhouse gas emissions are estimated to range between **16 to 19 million tons of CO_2**, primarily originating from combustion sources such as power plants and furnaces. In order to **offset** or fully **neutralize** these emissions, PGPIC has made strategic investments in two major environmental projects: **Bidboland Gas Refinery** and **Howeizeh Gas Recovery Project**.

Through the **elimination of gas flaring** from associated gas streams in the East and West Karoun oil fields, these projects are expected to reduce approximately **37 million tons of CO_2 per year**:

- **23 million tons** through the Bidboland project, and
- **14 million tons** through the Howeizeh project.

This not only enables the **complete offsetting (net-zero) of PGPIC's carbon emissions**, but also contributes an **additional 18–21 million tons** of CO_2 reduction annually for the country as a whole.

At present, the Group is actively planning and implementing **additional carbon-reduction initiatives**, including:

- **Feasibility studies for carbon capture** at Fajr and Mobin power plants, targeting CO_2 capture from turbine and boiler exhaust stacks;
- **Utilization of hydrogen byproduct** from the Arvand complex as an alternative fuel source;
- **Construction of a 20+ MW solar power plant** at the Bidboland Gas Refinery site.

These measures not only reduce the **carbon footprint of PGPIC's own products**, but also contribute to lowering the **carbon intensity of petrochemical production** in key industrial hubs such as Mahshahr and Assaluyeh, particularly due to the low-carbon electricity supplied by the Fajr and Mobin utilities.

According to World Bank statistics, **Iran's total national CO_2 emissions in 2020 stood at approximately 616 million tons**. Upon the full commissioning of the two mega gas recovery projects, PGPIC will enable a reduction of **approximately 4% of Iran's total emissions**, thus contributing meaningfully to the **country's voluntary commitments under the Paris Agreement**.

PGPIC's Net-Zero Carbon Ambition

PGPIC's Pathway by 2030

Base year 2024

Reduction Actions (15%, 2.8 million ton CO_2e)	Renewable Energy (10%)	Energy intensity improvement (1%)	Gathering Inner Flared Gas and Recovery (5%)
Offsetting Actions (85%, 40-million-ton CO_2e)	**Gathering Associated and Flared Gas and Utilization (out of PGPIC boundary)** • **Bidboland Gas Refinery feed by Flare Gas: 25 million tonCO_2e/yr.** • **Hoveizeh Gas Refinery feed by Flare Gas: 14 million tonCO_2e/yr.**	**Renewable Energy**	**Afforestation and Reforestation** • **100,000 tonCO_2e/yr emission reduction by planted Mangrove trees.** • **180,000 tonCO_2e/yr by rehabilitation of 8,000 hectares Mangrove forest in Mahshahr, Assaloyeh, and Mokran**

Faced with annual CO_2 emissions of 16 to 19 million tons—mainly from combustion in power generation and process furnaces—PGPIC has committed itself to the **global objective of achieving net-zero carbon emissions**. Inspired by leading international benchmarks in the petrochemical industry and aligned with principles of sustainable development, this objective has been placed at the core of the Group's long-term strategy.

Designing a **well-optimized transition pathway** to achieve low-carbon development and net-zero emissions is considered a **critical responsibility** for major industrial producers worldwide. This process requires integrated economic, technical, and environmental assessments. In line with this imperative, PGPIC has adopted an **initial target to reduce emissions by 15% by 2030**, using **2024 as the base year**.

To meet this target, four strategic pathways have been identified, and the Group's roadmap is structured around two complementary approaches:

- **Emission Reduction Measures**
- **Carbon Offset Initiatives**

Gaseous Emissions from Stationary Sources and Stacks

All **process stacks and furnace chimneys** at PGPIC subsidiary companies are equipped with **online emission analyzers**, which are connected to the **national environmental monitoring system**. In addition, **certified laboratories authorized by the Department of Environment** conduct sampling and monitoring on a **monthly or quarterly** basis.
All measurement results are in full compliance with national **environmental standards**. Due to the volume and frequency of data, reporting them in full within this document is not feasible.

Leak Detection and Repair (LDAR)

To identify and mitigate emissions of toxic gases, the **LDAR program** (Leak Detection and Repair) is being actively implemented across PGPIC companies. The Group has **mandated LDAR compliance** for all subsidiaries to minimize the release of hazardous gases into the environment wherever technically possible.

This program is currently being carried out in the following companies using **infrared detection cameras** and specialized equipment such as **TIGER** and **PHOCHECK** devices:

- **Pars**, **Nouri**, **Bandar Imam**, **Tondgouyan**, **Bou Ali Sina**, **Khuzestan**, and **Karun Petrochemical Companies**

One of the **major leak sources** identified through LDAR was the **release of large volumes of hydrocarbon compounds from the Cold Box unit** at **Pars Petrochemical Company**, which was fully rectified through **Cold Box replacement**.

Additionally, leaks of **BTEX compounds** (Benzene, Toluene, Ethylbenzene, Xylene)—known for their high toxicity and carcinogenicity—were detected and mitigated in the **Nouri** and **Bou Ali** complexes through the use of infrared cameras.

At **Bandar Imam Petrochemical Complex**, periodic monitoring and remediation are conducted for **Benzene, Vinyl Chloride (VCM), and other hazardous substances** along the pipelines.

At **Tondgouyan Petrochemical Company**, leak detection and mitigation of **Paraxylene** and **Acetic Acid** emissions are carried out using **PHOCHECK** devices.

The LDAR program is currently **under review and implementation across other subsidiaries** of the Group as well.

Carbon-Energy Management Projects

(Completed – Ongoing – Planned)

- **Review, update, and refinement** of energy management and emission reduction strategies identified in the Group's carbon strategy project
- **Identification of new energy-saving and emission-reduction solutions** across subsidiaries
- **Development of a centralized database of emission-reduction and energy-efficiency measures** by process category (e.g., Olefins, Aromatics, Methanol, Urea/Ammonia, etc.)
- **Initial technical and economic assessments** of proposed solutions, including baseline data estimation
- **Project definition leadership** for implementation across each subsidiary
- **Training and guidance for technical teams** within subsidiaries to carry out defined projects
- **Feasibility studies for obtaining domestic and international incentives**, including **carbon credits**, for eligible projects
- **Progress reporting and estimation of energy savings and carbon reduction outcomes** based on project implementation milestones

Project Title	Unit	Energy/Resource Savings	CO2 Emissions Reduction
Receiving 600 million scf/day of associated gas; construction and operation of Bidboland Refinery ($3.5B)	Bidboland Gas Refinery	Collection of 600 million scf/day of associated gas from NGL Co.	15,000,000 tCO2/y
Collection of flared gas from East Karoun to increase feedstock for Bidboland Refinery ($1.5B)	Bidboland Gas Refinery	Collection of 400 million scf/day from East Karoun flares	10,000,000 tCO2/y
Receiving 500 million scf/day of associated gas; construction and operation of Howeizeh Refinery ($2B)	Howeizeh Gas Refinery	Collection of 500 million scf/day from West Karoun flares	14,000,000 tCO2/y

Generation of 5,000 MW renewable power in cooperation with SATBA	PGPIC		7,000,000 tCO2/y
Mangrove Afforestation in Mahshahr Estuaries (Green Revolution): planting 8 million trees & developing 250 ha green space	Mahshahr & Asaluyeh		170,000 tCO2/y
Flare gas recovery and production of ammonium sulfate fertilizer	Nouri Petrochemical	80,000 t/y sour gas from units 250, 270, and 950 converted to: • 50,440 t LPG • 17.7 t natural gas • 59,000 t ammonium sulfate	137,000 tCO2/y 22,000 tSO2/y
Construction of 200 MW power plant (2.507 billion IRR)	Nouri Petrochemical	Power generation from renewables	230,000 tCO2/y
Use of CO2 from cold flare FL-491 for urea production at Hemmat Petrochemical	Pars Petrochemical	MoU signed with Hemmat Petrochemical Project	200,000 tCO2/y
Use of impure hydrogen from olefin unit for reforming and fuel gas	Bandar Imam Olefin	Annual savings: 10 million Nm3 of fuel gas	24,158 tCO2/y
Solar power projects (Bidboland): • 15.2 MW plant under construction • 16 MW expansion under study	Bidboland Gas Refinery	Renewable electricity generation	10,000 tCO2/y 11,000 tCO2/y
Internal flare recovery project	Bidboland Gas Refinery		900,000 tCO2/y
Use of seal drum in flare network design to eliminate sweeping gas	Bidboland Gas Refinery		1,000,000 tCO2/y
Addition of HRSG to recover thermal energy and produce steam	Bidboland Gas Refinery		87,000 tCO2/y
Installation of turbo expander at steam pressure reduction point (HPS to LPS)	Bidboland Gas Refinery	Equivalent to 0.5 MW power generation	

Turbine heat recovery by installing HESG and increasing efficiency	Bandar Imam Petrochemical		
Installation of economizer on old boilers to recover heat and improve efficiency	Bandar Imam Petrochemical		
CO2 prevention in urea unit compressor by design modification and commissioning of second compressor (50% completed)	Lordegan		81,840 tCO2/y
CO2 recovery from primary reformer stack in ammonia unit using amine absorption/desorption; feeding urea unit compressor (under study)	Lordegan, Hengam		88,704 tCO2/y
Feasibility study: CO2 recovery from Fajr Energy power plant stack for conversion to high-value products	Fajr Energy	Stack has high CO2 content but also high excess air, requiring high CAPEX	4,000,000 tCO2/y
Feasibility study: CO2 recovery from Mobin Energy power plant stack for conversion to high-value products	Mobin Energy	Stack has high CO2 content but also high excess air, requiring high CAPEX	4,000,000 tCO2/y

Water and Wastewater Management Strategy of the Persian Gulf Petrochemical Industries Company (PGPIC)

In the **Assaluyeh region**, PGPIC fulfills the responsibility of supplying industrial water to petrochemical complexes through **Mobin Energy Company**, which extracts seawater and desalinates it. Ultimately, Mobin Energy collects the **industrial wastewater** from these petrochemical companies, **treats and recycles** it to meet industrial water standards, thereby returning all wastewater back into use.

In the **Mahshahr region**, **Fajr Energy Petrochemical Company** supplies industrial water to the area's petrochemical companies by **treating water from the Karoun River**. The company also collects **wastewater from all local petrochemical sites** (except for **Tondgouyan** and **Bandar Imam**, which have separate treatment plants),

and discharges it to **Dorizeh Creek** after treating it to **near-compliance with national environmental standards**.

Other PGPIC petrochemical companies outside the Mahshahr and Assaluyeh hubs **source their water from nearby rivers** and treat their effluents through **modern in-house treatment facilities**. In these complexes, **emergency evaporation ponds** are installed to ensure that **non-compliant wastewater is never released into the environment** under any circumstances.

Zero Liquid Discharge (ZLD) Objective

To ensure resilience and sustainability amid the country's growing water crisis, PGPIC has adopted a **comprehensive wastewater treatment and reuse strategy** across all operating and upcoming projects. Accordingly, the following initiatives are underway in the Group's operational companies:

Wastewater Recycling Initiatives in Operating Facilities

- **Recycling over 10,000 m³/day of treated wastewater** from Assaluyeh petrochemical plants by **Mobin Energy Company**
- Implementation of a **ZLD (Zero Liquid Discharge) project at Bandar Imam Petrochemical Company**, with a total budget of **589,000 billion IRR + €26.3 million**, enabling the **treatment and reuse of over 40,000 m³/day** of wastewater
- **Recycling of 400 m³/hour** of treated effluent from the wastewater treatment unit at **Shahid Tondgouyan Petrochemical Company**
- **Recycling of 700 m³/hour** of low TDS wastewater by **Fajr Energy Company**

Urban Wastewater Reuse for New Projects

- Agreement for the use of **treated municipal wastewater** as process water in **Ilam Petrochemical**, based on an MoU among **Ilam Department of Environment, Ilam Water and Wastewater Company**, and **Ilam Petrochemical**
- Contract signed for the **treatment of municipal wastewater in Behbahan** to be used in the **PDH expansion project** of **Bidboland Gas Refinery**, based on an MoU among the **Khuzestan Department of Environment**, **Khuzestan Water and Wastewater Company**, and **Bidboland Gas Refinery**

ZLD Implementation in Upcoming Projects

- Construction and commissioning of **ZLD systems** in the following projects:
  - **Ilam Petrochemical**
  - **Bidboland Gas Refinery**
  - **Gachsaran Petrochemical**
- Mandatory ZLD implementation approved for all ongoing projects, including:
  - **Dehdasht**, **Andimeshk**, **Almas Mahshahr**, and others

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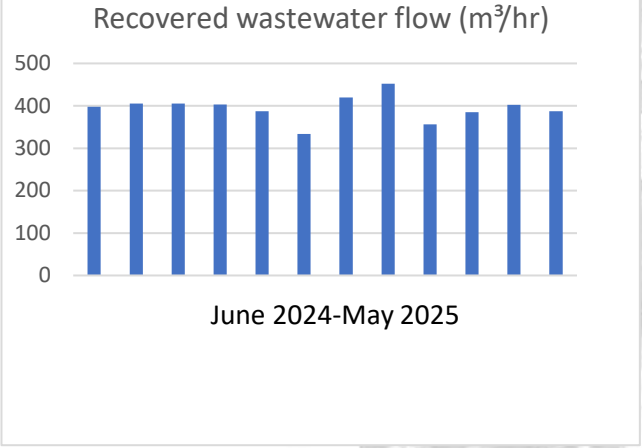
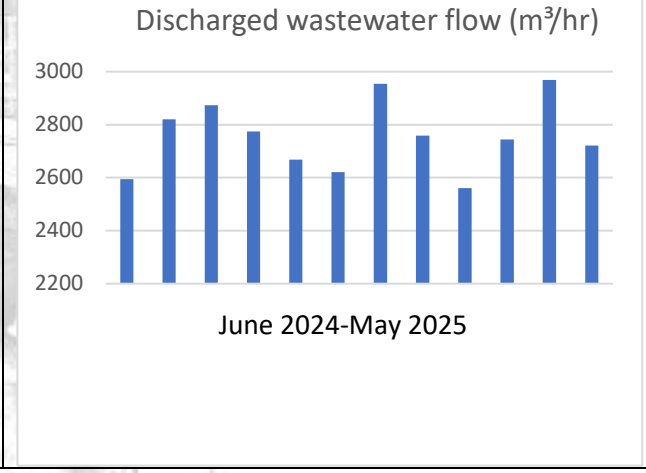
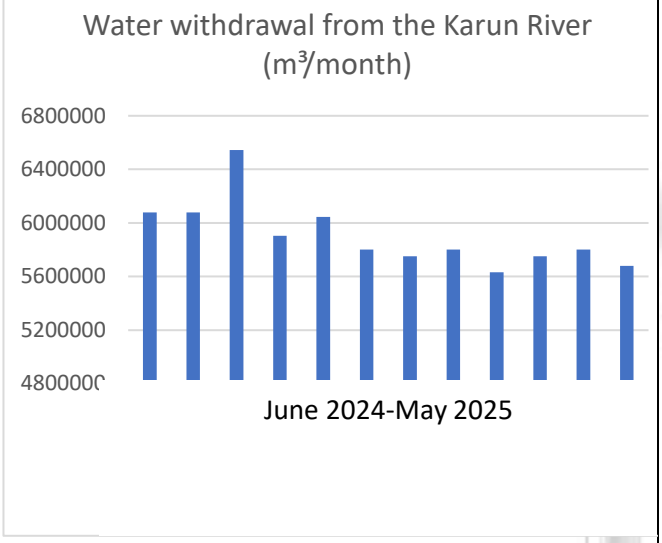
Enhancement and Expansion Projects

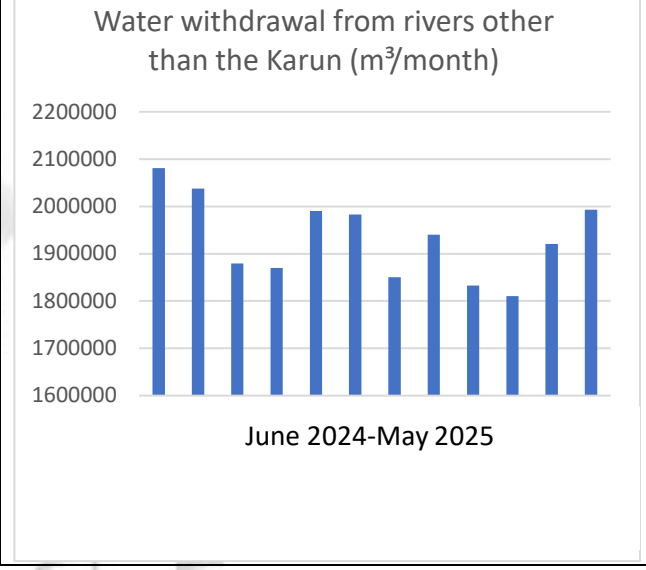
- Construction of a **dedicated wastewater treatment plant at Karun Petrochemical**
- Construction of a **dedicated wastewater treatment plant at Arvand Petrochemical**
- Expansion of the **No. 2 wastewater treatment unit at Fajr Energy Company** to a capacity of **650 m³/hour**
- Development of a **20,000 m³/hour desalination project**, led by **Arvand, Fajr, and Bandar Imam Petrochemical Companies**

- **Defined indicators for achieving zero liquid discharge (ZLD) and reducing water withdrawal from conventional sources**

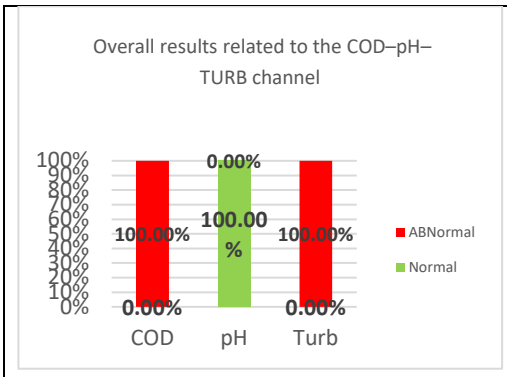


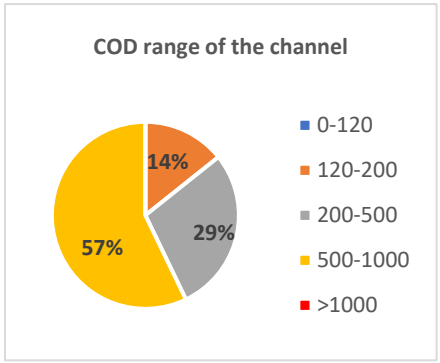




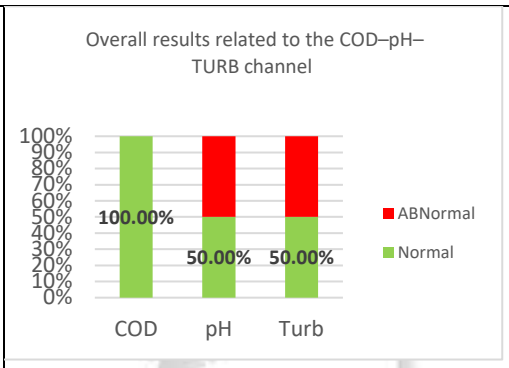


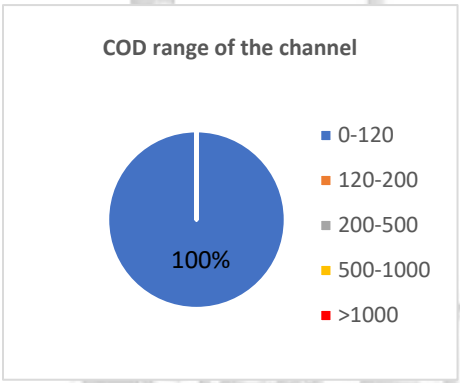
Indicators of wastewater discharge to surface water and the sea



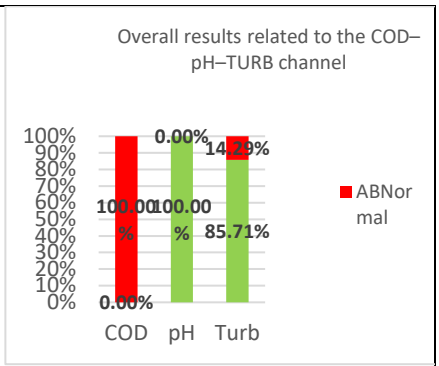


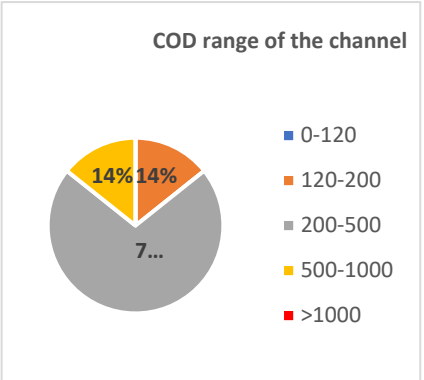
Treated effluent discharge of the Tondgouyan wastewater treatment unit in the year 1403 (2024) with a capacity of 450 m³/hr





Treated effluent discharge of the Bandar Imam wastewater treatment unit in the year 1403 (2024) with a capacity of 1500 m³/hr





Treated effluent discharge of Fajr Energy in the year 1403 (2024) with a capacity of 450 m³/h

Waste Management

Waste Type	Company	Management Method / Final Destination
TAR	Karoun	Sold as a valuable material with environmental permit – companies: Far Alloy Tam, Vira Carbon Palayesh Aras
AN-TAR	Karoun	Sold as a valuable material with environmental permit – Alvand Pars Sepahan Co.
UT Sludge	Karoun	Landfilled in Bandar Imam Petrochemical landfill with environmental permit

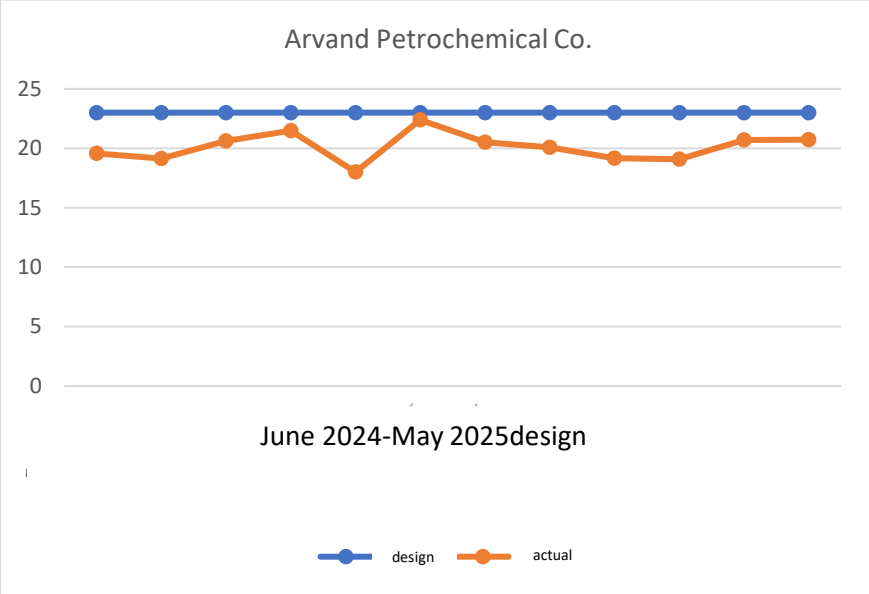
Red water	Karoun	Incinerated in licensed industrial incinerator – Kashef Sanat Mahshahr Co.
OTD	Karoun	Fully outsourced as raw material to downstream industries with environmental approval – added to Karoun's product list
Hydrogenation Catalyst Cake	Karoun	Recycled by qualified third-party companies with environmental permits
Diluted Sulfuric Acid	Karoun	Outsourced to downstream industries as a valuable material (~93% purity)
Polymerized Solvent NFM	Nouri	Incinerated by Rah Pouyan Saleh Isfahan Co.
Industrial Clay	Nouri	Landfilled – Chemical Waste Management Co. (Shimi Keshavarz)
Chemical & Biological Sludge	Mobin Energy	Landfilled – Chemical Waste Management Co. (Shimi Keshavarz)
Fabric Filter	Nouri	Landfilled – Chemical Waste Management Co. (Shimi Keshavarz)
Waste Liquid	Arvand & Bandar Imam	Incinerated in hazardous waste-controlled incinerators
EDC Waste – 300 tons	Arvand	Incinerated – PetroPalayesh Pasha Co.
Coke & Coke Sludge – 30 tons	Arvand	Incinerated – Rah Pouyan Saleh Isfahan Co.
Alpha Cellulose – 500 tons	Arvand	Recycled by companies licensed by DoE
Sulfuric Acid – 120 tons	Arvand	Recycled – Darband Shimi Co.
Metal-based Catalyst – 180 tons	Lordegan	Sold – Kharazmi Co.
Lime Sludge – 450 tons	Lordegan	Stored on-site
Polycarbonate Waste	Khuzestan	Sold
HBC (High Boiling Component)	Khuzestan	Sent to licensed incinerators – Rah Pouyan Saleh Isfahan Co.
Epoxy Resin Waste (solid & liquid)	Khuzestan	Sent to licensed incinerators – Rah Pouyan Saleh Isfahan Co.

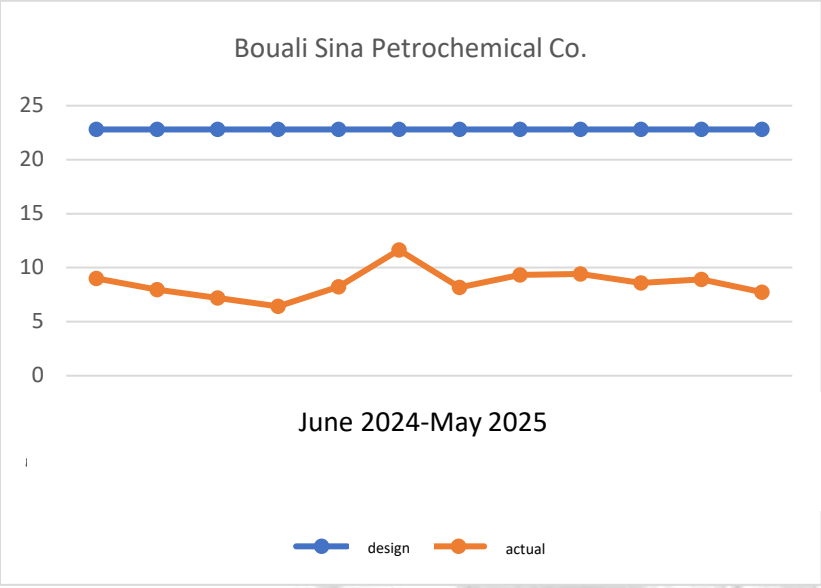
Interface	Khuzestan	Sent to licensed incinerators – Rah Pouyan Saleh Isfahan Co.
Waste BPA	Khuzestan	Sent to licensed incinerators – Rah Pouyan Saleh Isfahan Co.
Wood Waste	All companies	Auctioned to licensed recycling companies
Metal Scrap	All companies	Auctioned to licensed recycling companies
Plastic	All companies	Auctioned to licensed recycling companies
Big Bags	All companies	Auctioned to licensed recycling companies
Used & Waste Oil	All companies	Auctioned to licensed recycling companies
Rock Wool	Mobin, Nouri, Pars	Landfilled – Chemical Waste Management Co. (Shimi Keshavarz)
Melamine Waste – 30 tons/month	Urmia	Stored on-site
Medical Waste	All companies	Disposed via Oil Industry Health Organization
Used Lamps	All companies	Disposed via licensed service providers
Batteries	All companies	Disposed via licensed service providers
Paint & Thinner Waste	All companies	Incinerated – Rah Pouyan Saleh Isfahan Co.
Agricultural Waste	All companies	Landfilled – Designated zones by Pars Special Economic Zone Authority
Used Tires	All companies	Recycled – Sepano Electric Shargh Co.
Construction Debris	All companies	Landfilled – Designated zones by Pars SEZ
Municipal Waste	All companies	Landfilled – Designated zones in Pars and Mahshahr SEZs
Cable Waste	All companies	Sold via surplus committee
Ceramic Balls	All companies	Landfilled – Chemical Waste Management Co. (Shimi Keshavarz)

Energy Consumption Management

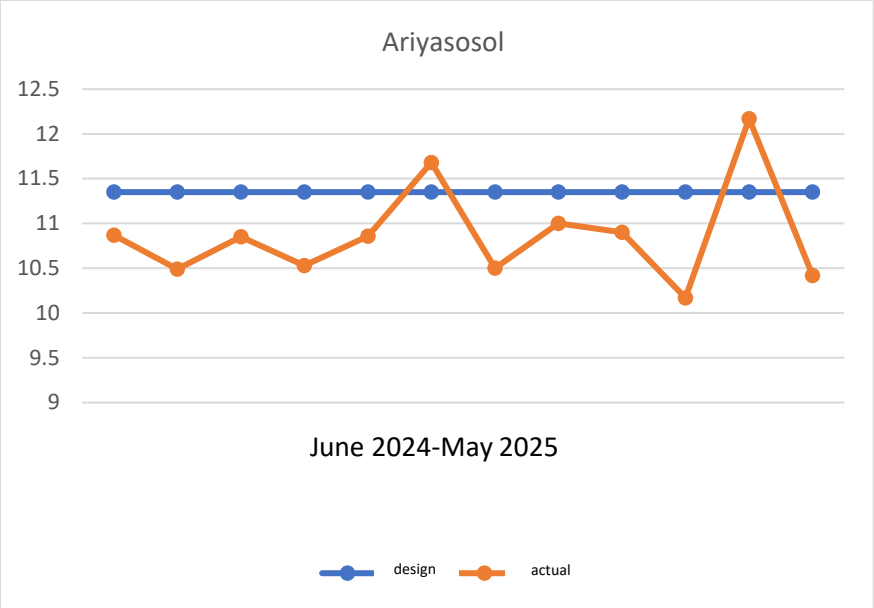
The **Specific Energy Consumption (SEC)**—measured in **gigajoules per ton of produced product**—for the companies within the Group, compared to their original

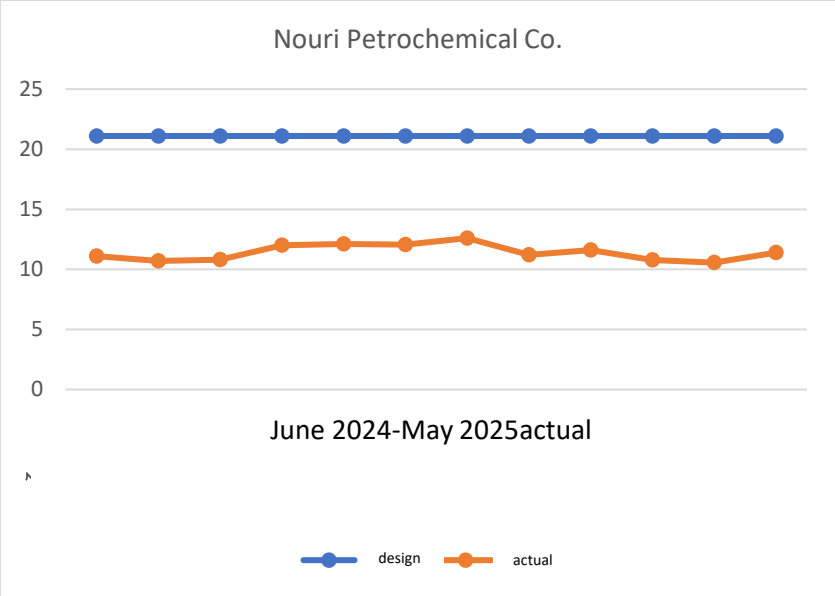
design values, is presented below.
Should a more in-depth analysis be required regarding higher energy intensity in certain months, **a detailed analytical report is available**.



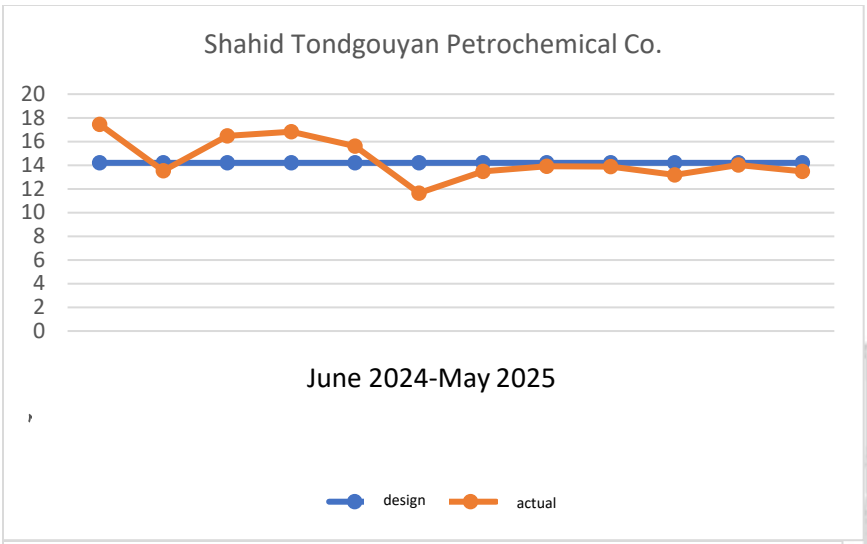


The reason for the reduction in consumption intensity in May is the shutdown of the Aromatics and PX units, resulting in the non-consumption of a significant portion of steam in the thermal section, as well as the shutdown of energy-intensive equipment, including pumps and compressors, in the electrical section.





The lower energy consumption intensity compared to the design values is due to the exclusion of the complex's produced fuel gas consumption from the relevant calculations.


Shahid Tondgouyan Petrochemical Co.
20
18
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10
8
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4
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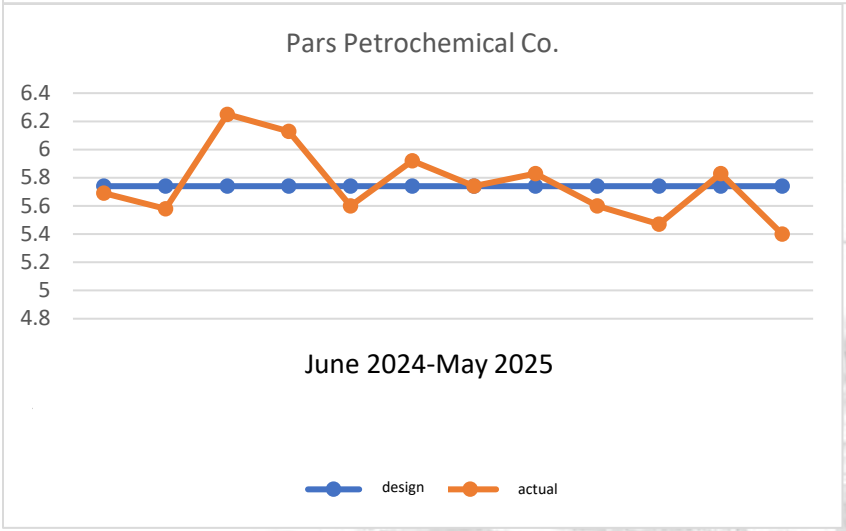
June 2024-May 2025
design
actual


Pars Petrochemical Co.
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5
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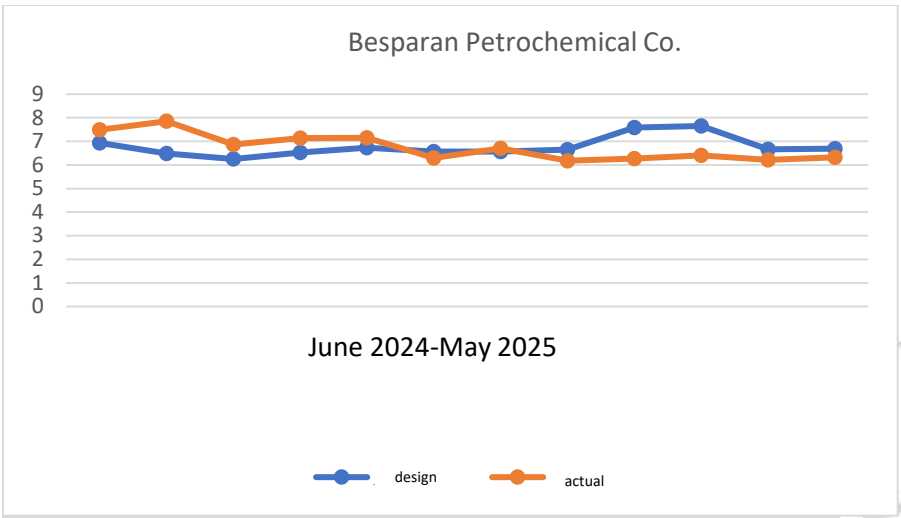
June 2024-May 2025
design
actual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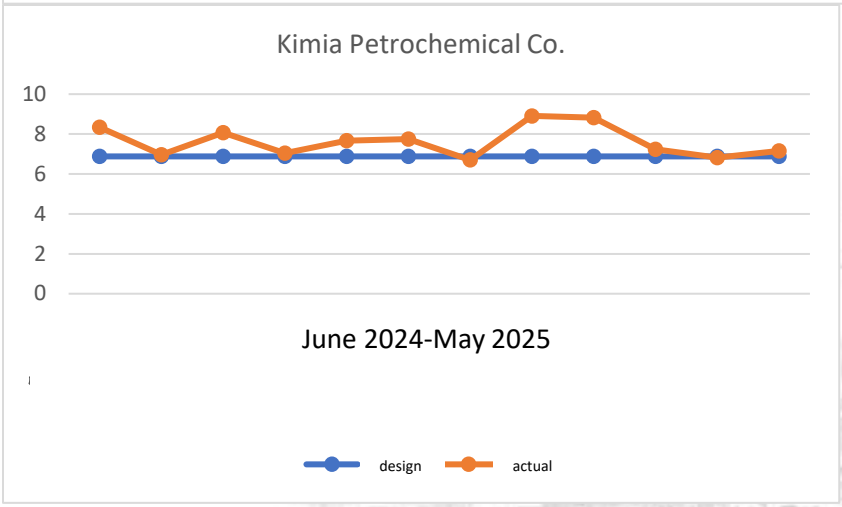
June 2024-May 2025
design
actual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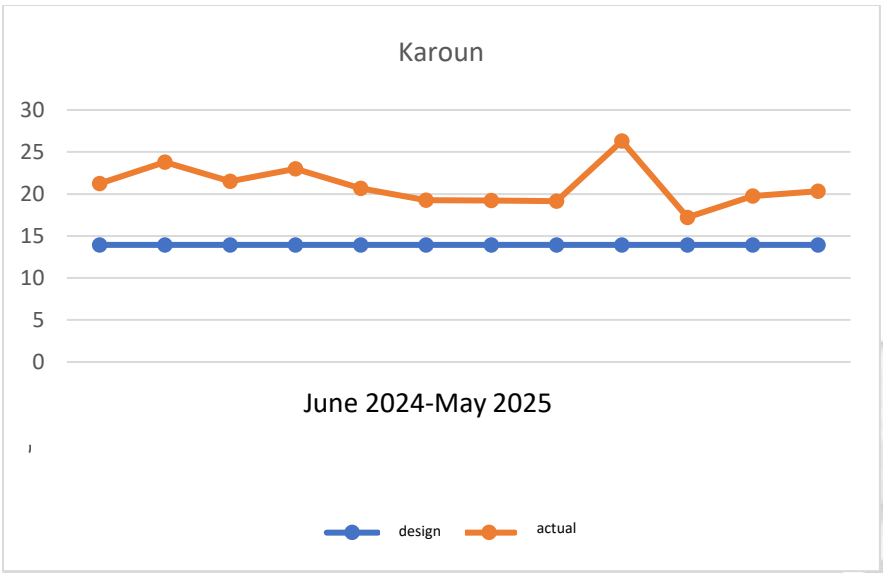
June 2024-May 2025
design
actual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June 2024-May 2025
design
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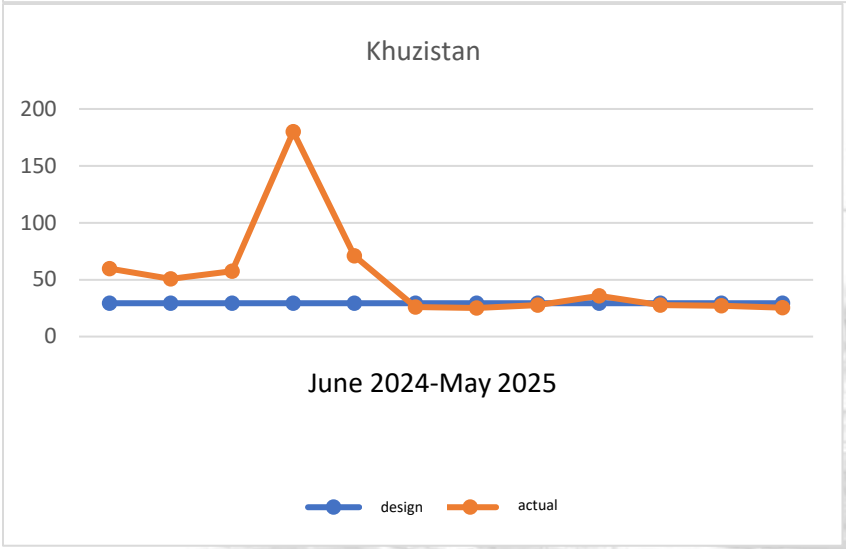
Khuzistan
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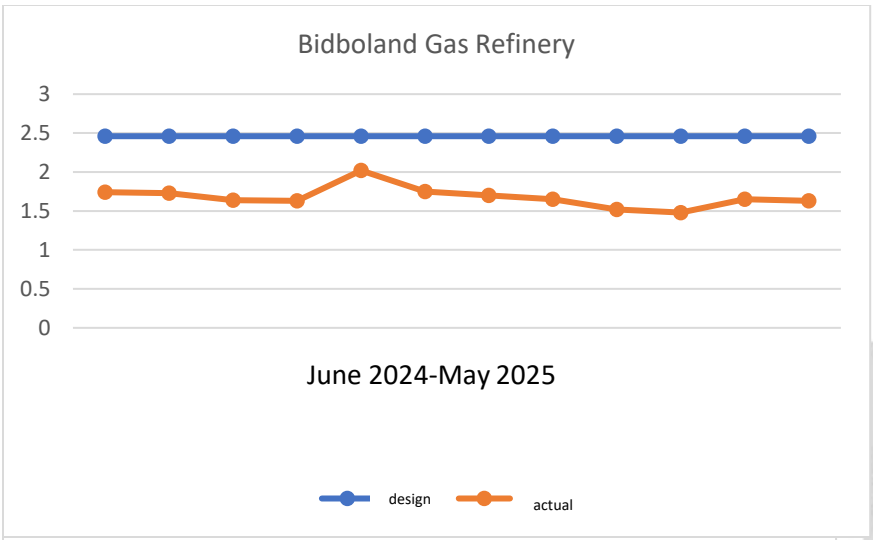
June 2024-May 2025
design
actual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2
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June 2024-May 2025
design
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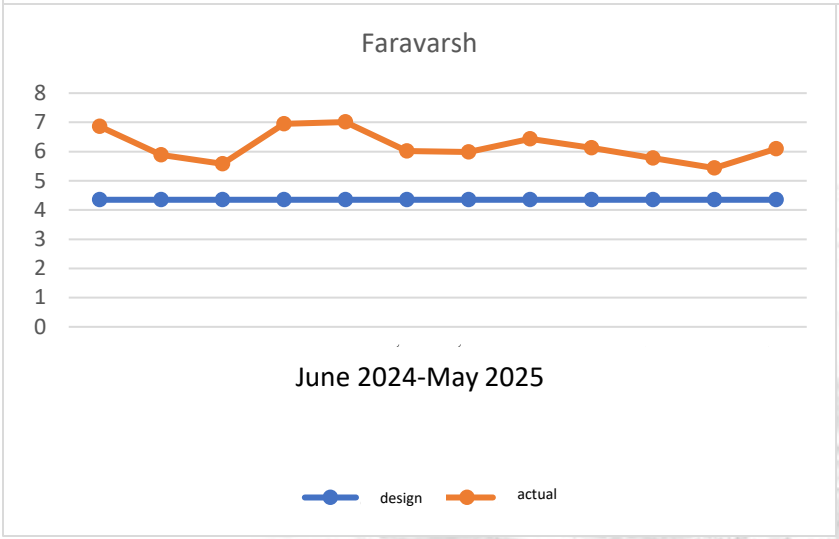
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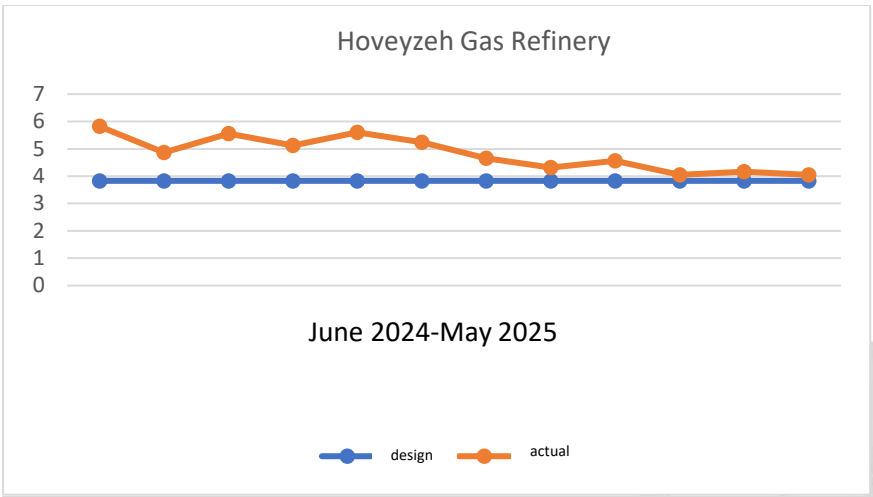
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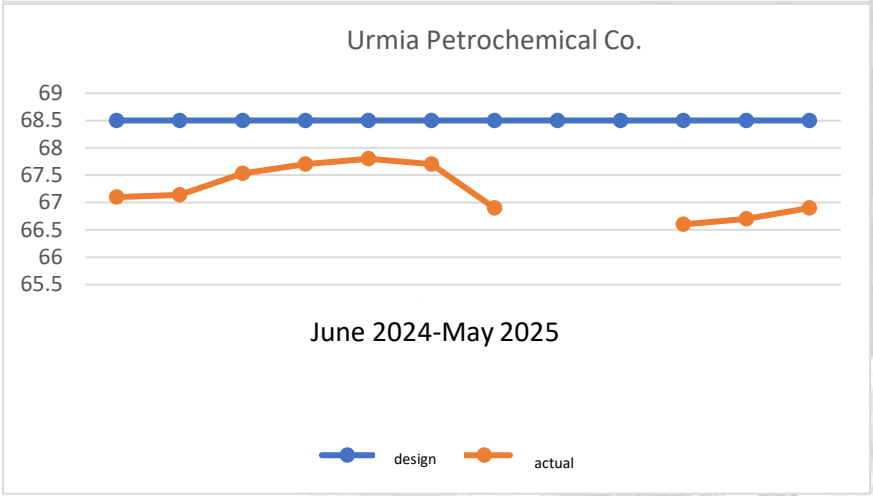
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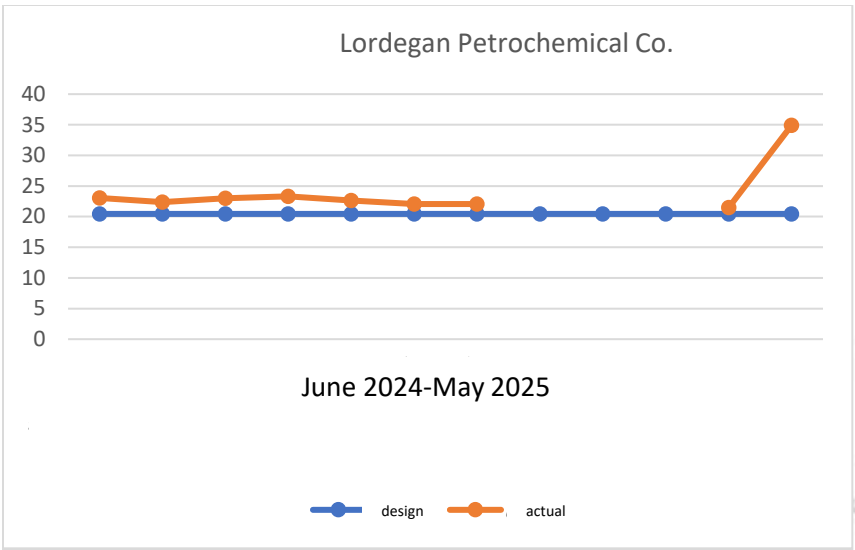
66.5
66
65.5
June 2024-May 2025
design
actual


Lordegan Petrochemical Co.
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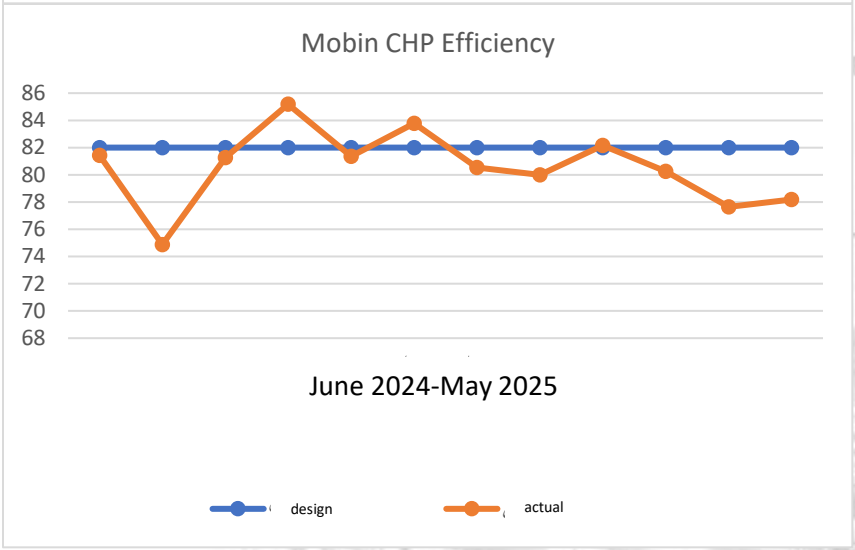
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76
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June 2024-May 2025
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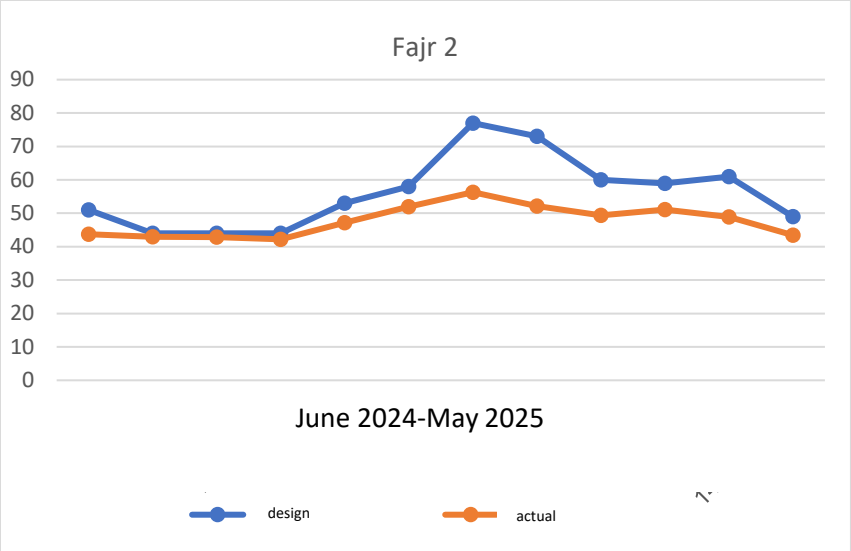
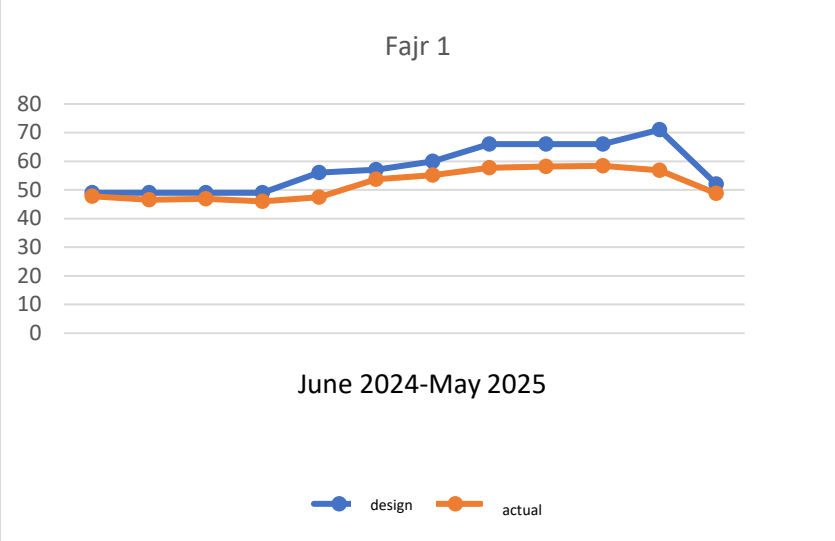
actual





It is worth noting that, given the nature of utility production in Fajr Energy Persian Gulf Company and Mobin Energy Persian Gulf Company, the CHP index for these two entities is evaluated. This index is defined as the ratio of the total combined energy of produced steam, electricity, and boiler feedwater to the total energy (in kilojoules) of the received and consumed natural gas and diesel fuel (in kilojoules).

Environmental Pollution Levy (Green Tax) for the Group's manufacturing companies in 2024 (Iranian year 1403)

Company	Spring	Summer	Autumn	Winter	Actions
Nouri	Green Industry (non-pollutin g)	Green Industry (non-pollutin g)	Green Industry (non-pollutin g)	Green Industry (non-pollutin g)	
Pars	Green Industry	Green Industry	Green Industry	Green Industry	

	(non-polluting)	(non-polluting)	(non-polluting)	(non-polluting)	
Urmia	Green Industry (non-polluting)	Green Industry (non-polluting)	Green Industry (non-polluting)	Green Industry (non-polluting)	
Mobin Energy	Green Industry (non-polluting)	Green Industry (non-polluting)	Green Industry (non-polluting)	Green Industry (non-polluting)	
Persian Gulf Houiz Refinery	Non-polluting — exempt from paying the pollution levy	Non-polluting — exempt from paying the pollution levy	Non-polluting — exempt from paying the pollution levy	Non-polluting — exempt from paying the pollution levy	
Bid Boland Persian Gulf Gas Refinery	Green Industry (non-polluting)	Green Industry (non-polluting)	Polluting — 0.5% of sales	Non-polluting — exempt from paying the pollution levy	Pollution in autumn: due to the national gas imbalance and a shortage of methane for sending acid gas to oil wells, they were compelled to flare acid gases. Autumn pollution status is under review and reconsideration.
Khuzestan	Non-polluting — exempt from paying the pollution levy	Non-polluting — exempt from paying the pollution levy	Non-polluting — exempt from paying the pollution levy	Non-polluting — exempt from paying the pollution levy	
Gachsaran	Non-polluting — exempt from paying the pollution levy	Non-polluting — exempt from paying the pollution levy	Non-polluting — exempt from paying the pollution levy	Non-polluting — exempt from paying the pollution levy	
Bouali	Non-polluting — exempt from paying the pollution levy	Non-polluting — exempt from paying the pollution levy	Non-polluting — exempt from paying the pollution levy	Non-polluting — exempt from paying the pollution levy	

Lordegan	Non-polluting — exempt from paying the pollution levy	Polluting — 0.5% of sales	Polluting — 0.5% of sales	Out of service and not subject	Due to elevated calcium concentration in the discharged effluent
Fajr Energy	Polluting — 0.5% of sales	Polluting — 0.5% of sales	Polluting — 0.5% of sales	Polluting — 0.5% of sales	Off-spec treated effluent discharged to the khor (tidal creek)
Ilam	Polluting — 0.5% of sales	Polluting — 0.5% of sales	Polluting — 0.5% of sales	Polluting — 1% of sales	Flaring above standard limits
Bandar Imam	Polluting — 0.5% of sales	Polluting — 0.5% of sales	Polluting — 0.5% of sales	Polluting — 0.5% of sales	Off-spec treated effluent discharged to the khor (tidal creek)
Tondgouyan	Polluting — 0.5% of sales	Polluting — 0.5% of sales	Polluting — 0.5% of sales	Polluting — 1% of sales	Off-spec treated effluent discharged to the khor (tidal creek)
Arvand	Polluting — 0.5% of sales	Polluting — 0.5% of sales	Polluting — 0.5% of sales	Polluting — 0.5% of sales	Off-spec treated effluent discharged to the khor (tidal creek)
Karun	Polluting — 0.5% of sales	Polluting — 0.5% of sales	Polluting — 0.5% of sales	Polluting — 0.5% of sales	Off-spec treated effluent discharged to the khor (tidal creek)
Hengam	Not commissioned and not subject	Not commissioned and not subject	Polluting — 0.5% of sales	Follow-up under way to remove polluting status	Lack of online monitoring systems — now installed

Key Environmental Projects to Exit Pollution Status — Polluting Companies (Year 1403, Iranian Calendar)

Company	Project	Status	Project Start	Project Completion	Approved Budget	Progress Status
Key Environme	Key Environmen	Key Environme	Key Environme	Key Environme	Key Environme	Key Environme

ntal Projects Aimed at Eliminating Pollution in Polluting Companies	tal Projects Aimed at Eliminating Pollution in Polluting Companies	ntal Projects Aimed at Eliminating Pollution in Polluting Companies	ntal Projects Aimed at Eliminating Pollution in Polluting Companies	ntal Projects Aimed at Eliminating Pollution in Polluting Companies	ntal Projects Aimed at Eliminating Pollution in Polluting Companies	ntal Projects Aimed at Eliminating Pollution in Polluting Companies
In negotiations with Fajr to construct the WWTP with Arvand's investment	560 billion tomans	1405/02/31	1402/02/01	Ongoing	Construction of a Centralized Industrial Wastewater Treatment Plant (Complex)	Arvand
To be commissioned at the first unit shutdown upon connecting to the DCS control system	5 billion tomans	1403/11/30	1402/05/01	Ongoing	Optimization of the Neutralization Package for the HTDS Waste Stream	Arvand
Re-tendered (no winner)	17 billion tomans	1403/12/29	1402/12/01	Ongoing	Construction of Sludge Tank and Ancillary Facilities (Fourth Wastewater Tank)	Arvand
Under review and study	323 billion tomans	1405/03/31	1402/12/01	Ongoing	Implementation of the SRS Project for Sulfate Control	Arvand
Contractor selected	54 billion tomans	1403/07/03	1402/12/01	Ongoing	Second Filter Press Project	Arvand
Qualitative evaluation of bidding contractors in progress	186 billion tomans	1405/01/15	1402/12/15	Ongoing	Centrate Water Recovery Project	Arvand

Qualitative evaluation of bidding contractors in progress	EUR10,400,000	Ongoing	Ongoing	Ongoing	Procurement of New Dryers for PTA1 and CTA1 Units	Tondgouyan
Qualitative evaluation of bidding contractors in progress	EUR 2,900,000	Ongoing	Ongoing	Ongoing	PTA1 Unit — Fine Recovery	Tondgouyan
Qualitative evaluation of bidding contractors in progress	EUR 4,150,000	Under review and feasibility assessment	Under review and feasibility assessment	Under review and feasibility assessment	Replacement of RPF Equipment with Decanters — PTA2 Unit	Tondgouyan
Qualitative evaluation of bidding contractors in progress	million rials 170,000	Ongoing	Ongoing	Ongoing	Redesign, Procurement, and Installation of Diffusers — CF Unit	Tondgouyan
Qualitative evaluation of bidding contractors in progress	million rials 15,500	Under review and study	Under review and study	Under review and study	Rehabilitation, Installation, and Execution of the Incinerator Package — PTA2 (Phase 1)	Tondgouyan
Qualitative evaluation of bidding contractors in progress	million rials 341,763	Ongoing	Ongoing	Ongoing	ساخت و راه اندازی درام واحد 1771 PTA2	Tondgouyan
Qualitative evaluation of bidding contractors in progress	million rials 70,000	Ongoing	Ongoing	Ongoing	Repair and Rehabilitation of the Wastewater Storage Tank Coating — PTA2	Tondgouyan
Qualitative evaluation of bidding	Under budget estimation	Under review and feasibility	Under review and feasibility	Under review and feasibility	Study and Assessment of Adding an AOP	Tondgouyan

contractors in progress		assessment	assessment	assessment	Package to the WWTP Outlet	
Qualitative evaluation of bidding contractors in progress	Under budget estimation	Ongoing	Ongoing	Ongoing	Tank 5303 Cover	Tondgouyan
Qualitative evaluation of bidding contractors in progress	Under budget estimation	Ongoing	Ongoing	Ongoing	Procurement and Installation of New Dryer 2402	Tondgouyan
Qualitative evaluation of bidding contractors in progress	Under budget estimation	Ongoing	Ongoing	Ongoing	Procurement and Installation of New Dryer 1402	Tondgouyan
Qualitative evaluation of bidding contractors in progress	Funded from the main contractor's budget	Ongoing	Ongoing	Ongoing	Closing Punch-List Items of CPI and DAF — WWTP	Bandar Imam
Qualitative evaluation of bidding contractors in progress	Not required	Under review and feasibility assessment	Under review and feasibility assessment	Under review and feasibility assessment	Assessment of Stepwise Injection of Spent Caustic into the WWTP	Bandar Imam
Under construction; a significant portion of the equipment has been purchased	6,000,000 million rials				Project: Construction of a Comprehensive Industrial WWTP	Karun
Implementation requires approval	50000 billion tomans	In the study and feasibility phase	In the study and feasibility phase	In the study and feasibility phase	Project: Seawater Intake Instead of Karun River	Fajr Energy
Implementation requires approval	1500 billion tomans	In the study and feasibility phase	In the study and feasibility phase	In the study and feasibility phase	Project: WWTP Expansion Plan	Fajr Energy

Participation in Biodiversity Conservation (Biodiversity)

Biodiversity is a vital characteristic of life, defined by the vast variety of plants and animals. It is a non-renewable resource, the loss of which would be irreversible. The growing importance of biodiversity lies in its role in maintaining the stability of ecosystems. In an ecosystem, the greater the species diversity, the longer the food chains and the more complex the life networks, resulting in a more stable environment with enhanced self-regulating capacity.

With the increase in population—and consequently, the escalation of environmental pollution, destruction of ecosystems, and depletion of natural resources—the extinction of species has emerged as a serious and alarming threat to human civilization.

One of the key responsibilities of organizations in managing environmental obligations is to consider the impacts of their activities on biodiversity, to engage in protecting animal and plant species, and to preserve natural habitats. The oil industry is one of the sectors whose impacts on the degradation of ecosystems and the diversity of flora and fauna in operational areas are undeniable. Therefore, a critical issue that companies in this industry must address is how to actively participate in biodiversity conservation.

Notable Actions of the Persian Gulf Petrochemical Industries Group Regarding Biodiversity

Company	IUCN Red List Status	Action	Description
Mobin Energy Company	Listed in the IUCN Red List as an Endangered Species	Protection of Hawksbill and Green Turtles	Seawater intake has always resulted in the entry of sea turtles into the intake basin. Since the company's establishment, in order to protect these species, divers from the company have been engaged in capturing and releasing the turtles back into the sea. Since 2012 (1391 in the Solar Hijri calendar), with the establishment of the Assaluyeh Environmental Department, the Persian Gulf Mobin Energy Company’s efforts to protect sea turtles have become more structured. These actions have been carried out under the supervision of experts from that department, with tagging and biometric measurements conducted prior to release. In addition, to protect nests from invasive species such as foxes and seabirds, the company

			cooperated in guarding and monitoring nests in Nayband National Marine Park, an initiative that continued until 2018 (1397).
Nouri Petrochemical Company	Listed in the IUCN Red List as an Endangered Species	Protection of the Indo-Pacific Humpback Dolphin	The Indo-Pacific humpback dolphin is listed in the IUCN Red List as an endangered species. Major threats to this marine mammal include overfishing, boat propeller strikes, marine pollution, and habitat loss or degradation. The Dayer–Nakhiloo National Park is one of the key habitats for the humpback dolphin in Iran. It also has high fisheries potential and is an important nesting area for sea turtles. Thousands of terns migrate to this area each year to breed. Despite its high ecological value, preliminary information about the park has been very limited, and research has indicated a decline in marine resources and an increase in marine pollution. In March 2014 (Esfand 1392), a research project for the conservation of humpback dolphins was launched, focusing on better understanding the area, assessing population size and distribution, and obtaining quality photographic records. This project is considered a successful example of collaboration between the private sector (Nouri Petrochemical Company), a government agency (Bushehr Province Department of Environment), an environmental NGO (Dream Land Kish Project Institute), and the local community (residents of the study area), which has effectively continued for 13 years to achieve the conservation goals.
Petrochemical Companies in Mahshahr and Assaluyeh	Listed in the IUCN Red List as an Endangered Species	Planting Over 8 Million Mangrove Trees (Avicennia marina) — a Rare Persian Gulf Species — in	Iran’s mangrove forests grow in eight protected areas along the coasts of the Persian Gulf and the Sea of Oman. Among the most important are the northern and western shores of Qeshm Island and the Nayband Forest in Bushehr Province. The removal of mangrove forests increases greenhouse gas emissions. In Iran, the Harra Biosphere Reserve

		Mahshahr Area	is the only protected mangrove area along the Persian Gulf and Sea of Oman coasts, and it has the highest density of mangrove cover in the region. These coastal mangrove forests are highly sensitive and fragile ecosystems that play an essential role in maintaining biodiversity. Protecting specific species such as Harra (Avicennia marina) and Chandal (Rhizophora mucronata), whose northeastern distribution limit is in this biosphere reserve, is of great importance and necessity.

Employee Health Protection and Complex Safety

In line with safeguarding employee health and ensuring a safe work environment, actions have been defined—along with corresponding indicators—that are monitored under the following headings:

Short- and Long-Term Goals and Programs of the Group's Safety and Health Department:

- Comprehensive assessment of fire stations as a high-priority program across complexes.
- Development and issuance of approved guidelines by the Technical Committee for defining requirements and specifications of fixed and mobile safety and firefighting equipment.
- Revision of the accident analysis procedure and establishment of an Accident Analysis Committee.
- Review and execution of a comprehensive HSE audit to identify and control existing potential risks in operational units, aiming to minimize them.
- Continuous follow-up on the quantitative and qualitative status of fire station equipment and personnel.
- Measurement of harmful workplace factors, including chemical, physical, and ergonomic hazards.
- Management, monitoring, and control of workplace air pollution, elimination of process leaks, reduction of occupational exposures, and implementation of respiratory protection programs.
- Biological monitoring of employees exposed to chemical pollutants.
- Monitoring and controlling noise pollution, implementing control measures, and executing hearing conservation programs.
- Comprehensive ergonomics evaluation and diagnosis of musculoskeletal disorders, followed by corrective actions.
- Health Risk Assessment (HRA) using artificial intelligence, with the identification of corrective actions to reduce or eliminate risks.

- Precise and regular monitoring of employee health through periodic occupational medical examinations to enable early detection of health issues and occupational diseases, along with epidemiological monitoring of occupational health records.
- Health Impact Assessment (HIA) of petrochemical projects and development initiatives.
- Improvement of nutrition standards and enhancement of employees' food security.
- Prevention of chronic non-communicable diseases through operational programs such as medical screenings (including liver and kidney ultrasound), cardiovascular screenings, increasing employees' per capita sports activity, and training on chronic disease prevention.
- Continuous improvement of water supply systems and upgrading the quality of drinking water.
- Enhancement of employee accommodation standards in compliance with environmental health criteria.
- Monitoring and evaluating psychological risks, and supporting the mental health of employees and their families.
- Development of health protocols for dealing with emergencies and emerging biological diseases.
- Providing necessary training to employees regarding health hazards in industrial environments.

Reducing Incident Rates and Enhancing Safety Levels

Control of Operational/Process Risks:

- Planning and executing hazard identification and risk assessment studies for projects, plans, and operational facilities.
- Implementing appropriate control measures to reduce risks to acceptable levels.
- Establishing mechanisms to ensure that control measures are implemented and risks are reduced to acceptable levels.

Enhancing Process and Operational Safety:

- Implementation of the PHSER procedure to ensure the integration of HSE requirements and the importance of HSE roles in all project stages, ensuring incident-free commissioning.
- Application of Ministry of Petroleum regulations, guidelines, and instructions—including "Confined Space Entry," "Permit to Work System," "Excavation Safety," "Incident Investigation, Analysis, and Reporting," and "Pre-Startup Safety Review (PSSR)"—across all companies, projects, and facilities, as well as the development and execution of operational procedures in line with these guidelines.
- Evaluation of pipeline safety status.

- Implementation of the Tank Safety Guide.

Improving and Upgrading Safety and Firefighting Systems:

- Ensuring the implementation of guidelines for “Procurement and Approval of Firefighting Foams” and “Building Safety” across all companies, facilities, and operational areas.
- Ensuring the performance of fixed fire detection and suppression systems, and the adequacy of existing firefighting water ring systems in facilities to handle identified credible scenarios.
- Equipping all industrial and non-industrial facilities with fixed fire detection and suppression systems.
- Rehabilitation and upgrading of existing fire detection and suppression systems in facilities and operational areas.
- Upgrading and ensuring the proper functioning of fire detection and suppression systems for flammable liquid storage tanks, power substations, and control rooms.

Enhancing HSE Awareness and Culture

HSE Culture Assessment (based on methodologies such as SHELL, BP, or OGP):

- Selection of diverse and representative samples.
- Execution of field and operational measures.

Improving the Quantity and Quality of HSE and Passive Defense Training:

- Planning and delivering general HSE and passive defense training of at least 8 person-hours per capita for all company employees and contractors.
- Planning and delivering specialized HSE and passive defense training for supervisors and managers, at least 5 person-hours per capita.
- Conducting specialized and professional HSE and passive defense training courses for HSE and passive defense personnel, at least 16 person-hours per capita.
- Planning and delivering required training for implementing the Oil Industry Emergency Management System in line with the five standardized modules issued.
- Planning and delivering HSE training for contractors in accordance with the “HSE Management Requirements and Procedures in Oil Industry Contracts” directive.

Improving Contractor HSE Performance

Enhancing Contractor HSE Management Processes:

- Implementation of the Ministry of Petroleum's "HSE Management Requirements and Procedures in Oil Industry Contracts."

Improving HSE Monitoring and Control Processes

Implementation of the HSE and Passive Defense Performance Evaluation Guide:

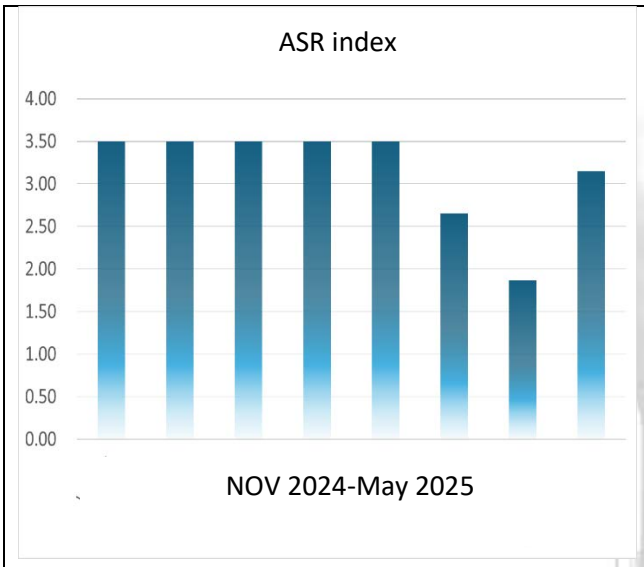
- Planning and executing the Ministry-issued HSE and Passive Defense Performance Evaluation Guide.
- Extracting, reporting, and ensuring the accuracy and precision of issued indicators.

Improving HSE Systems

Detailed Assessment of Current HSE Systems:

- Reviewing and identifying the current state of HSE systems and equipment.
- Identifying weaknesses in HSE systems and equipment.
- Defining improvement actions and prioritizing them.

Safety and Health Indicators
(Indicators section content to be detailed according to specific KPIs in the source document)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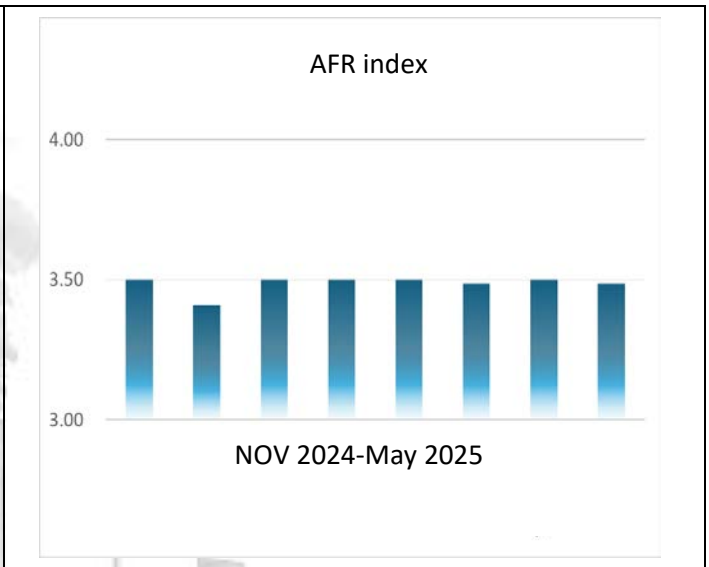
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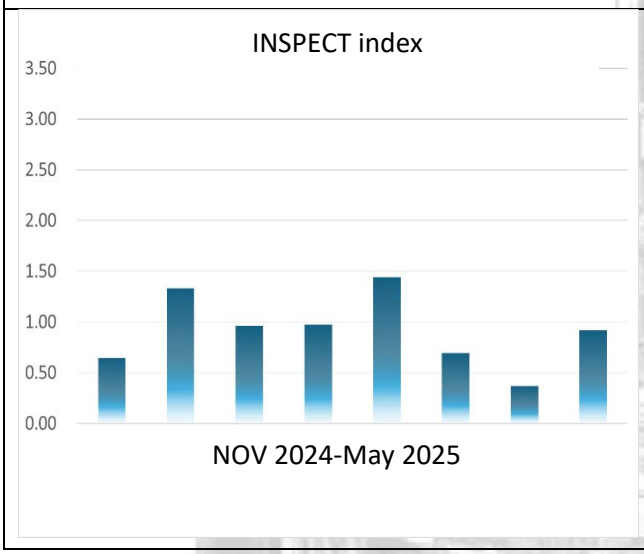
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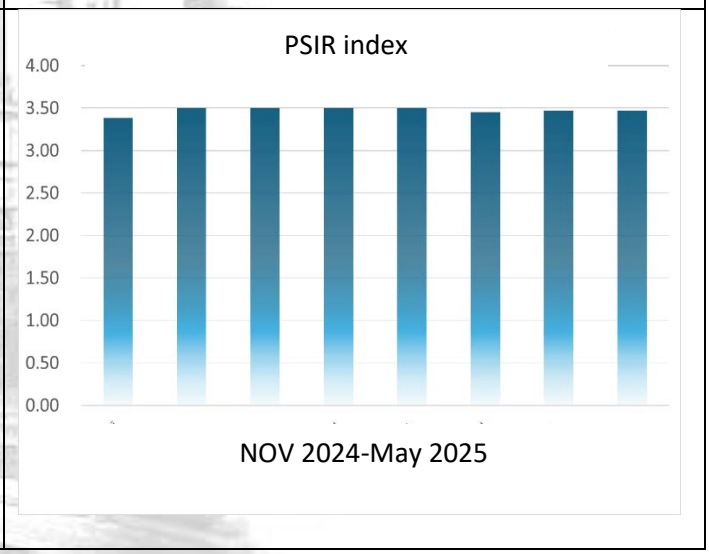
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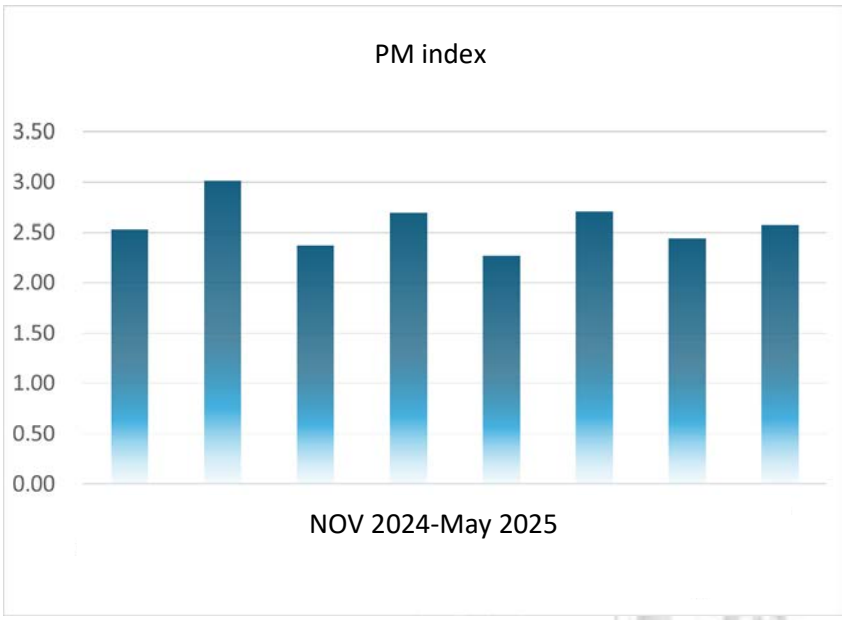
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NOV 2024-May 2025