Issue 23 Q3 | 2023

**Quarterly Newsletter** 



### UNLEASHING THE POWER OF COLLABORATION







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### LETTER FROM THE EDITOR



It is worth highlighting the major challenges for energy producers, and efforts being discussed today for strategic implementation of short and long term up to 2050/2060. Downstream growth and innovation will be integral in defining the energy industry's future as companies across the value chain implement their Net-Zero strategies. Advancing tangible solutions in refining and petrochemicals will ensure the industry can effectively navigate these shifting energy demands.

The world needs urgent and tangible solutions to the challenges of climate change and decarbonisation and these awards continue to evolve to showcase the leadership in innovation and collaboration to drive the industry forward.

Our Technical Committees are the pillars of knowledge, they actively continued their quarterly virtual and faceto-face meetings as per their schedule throughout this quarter while visiting hosting companies' plants and working on high impact projects, specific initiatives that will hugely benefit the energy industry in the future we will be introducing a new column, "GDA Connect" that will present a glimpse of items to contact industry

and academia networking, knowledge sharing, new projects' information, site visits and more. We invite you to view the below link to understand more about "GDA Connect."

System Walkthrough - https:// vimeo.com/manage/

Check out as well GDA website's Media Centre, Webinars, GDA Conversation for Episode 23 of "Optimizing Energy Efficiency", "Insite from Thermodynamics Analysis Study of the Asset Utilization Impact on Specific Energy Consumption", "Advanced Energy Topics", and "Al Zour Refinery Fired Heaters Optimization".

Please take a moment to read through our newsletter and enjoy the updates.

Kindly share your valuable perspectives once you have had the opportunity to explore the content through:

### https://bit.ly/3qxnlav

### Your Friend, Mohammed Ali Mansoor **GDA** Technical Manager

# **BAPCO HOSTS TECHNICAL COMMITTEE ACTIVITIES**



### **Q2 MEETING** FOR GDA PROJECT MANAGEMENT **COMMITTEE AT BAPCO CLUB**

In its commitment to advancing knowledge exchange, Bapco welcomed members of the Project Management Committee of the Gulf Downstream Association (GDA) at the Bapco Club in Awali on 16<sup>th</sup> and 17<sup>th</sup> August, 2023. Over the course of two days, the event showcased a visit to the refinery and an exploration of the Bapco Modernization Program (BMP), delivering key insights into the layout of the new process units and the latest advancements in Bahrain's largest-ever project.

A notable highlight of the event was a meeting with Mr. Hafedh Alqassab, Acting Deputy CEO & BMP Project Director, GDA Board Member and Financial Secretary, who shared his experiences in managing this ambitious project and the challenges it entails. He also touched on critical success criteria for such massive project.



The committee members engaged in discussions on a wide range of topics, including the significance of utilizing 3D laser scanners for refinery applications, the challenges faced by engineering consultants during the Front-End Engineering Design (FEED) phase, and the essential competencies required for oil and gas project managers.

Attendees of the event included Mr. Emad Almuhaisen, Division Manager at Aramco; Mr. Tofek Bahomed, Engineering Manager at Worely; Mr. Omar Alghanim, Team Leader at Kuwait Petroleum International; Mr. Khalid Alnabhani, Project Team Leader at OQ Oman; and Mr. Hazem Hasan, Senior Project Engineer and GDA representatives.

The successful Q2 meeting at Bapco Club served as a testament to Bapco's unwavering commitment to promoting collaboration and knowledge sharing among GDA members.

### **GDA COMMISSIONING & STARTUP COMMITTEE Q2 MEETING**

BAPCO hosted GDA's Commissioning & Startup Committee meeting at the Bapco Club in Awali on 23rd and 24<sup>th</sup> August, 2023. The purpose of this two-day event was to highlight the BMP and the Bapco Training & Development Department to showcase importance of one of the biggest projects in Bahrain to-date. The opening meeting, held with Mr. Hafedh Algassab (BMP Project Director), who emphasized the importance of adopting a human-centric approach in building high-performing teams that strive for excellence through autonomy. He also touched upon the critical success criteria for a such a massive undertaking.

The committee members engaged in fruitful discussions covering various topics, including the significance of pre-commissioning and Commissioning activities, the challenges faced by the Operations Team during the Front-End Engineering Design (FEED) phase, and the essential competencies required for any oil and gas projects during commissioning phase.

These challenges were likely discussed in detail during the meeting, with participants sharing their experiences, insights, and strategies for overcoming them. Prominent attendees included Mr. Rajib Talukder, SME - Hydroprocessing at Aramco; Mr. Tom Di Giacomo, CEO of Cabinda Refinery; Mr. Abdulaziz Al-Mutairi, Team Leader Operations at Kuwait National Petroleum Company (KNPC); Mr. Sultan Al Alawi, Head of Operation at OQ Oman; Abdullah Al Yasi, Utilities Complex Manager at YASREF; and Mr. Ali A.Karim, Manager of Oil Processing Department North at Bapco and Chairman of GDA's Commissioning & Startup Committee and GDA representatives.



### **Q3 MEETING FOR GDA HEALTH AND SAFETY** COMMITTEE

On the 13th and 14th of September, the Bapco welcomed members of GDA's Health & Safety Committee at the Bapco Club, Awali. The two-day event featuring a visit to the BMP and a meeting with Acting Deputy Chief Executive Operations and BMP Project Director Mr. Hafedh Alqassab, who offered valuable insights into the project and his experience and challenges while managing the project. He emphasized on the importance of HSE, the key factor for success in a project of this size involving huge multinational workforce. He also pointed out the recent achievement of groundbreaking record of reaching 60 million workhours without a lost-time injury. He also appreciated the existing Health and Safety tools in the project that helped in achieving this record of the massive project.

The committee members were engaged in discussions on a wide range of topics and shared experiences on emerging issues, including publishing a periodic bulletin that contains lessons learnt from all member companies and creating a program that addresses safety culture.

The meeting included two sessions, one on PSM Journey at Bapco by PSM & IIR Superintendent (Mr. Kugan) and other on Operational Excellence Management by Corporate Excellence Specialist (Mr. Mahmood Eid).



Attendees of the event included Mr. Naser Bader, Senior Safety Engineer at KNPC; Mr. Raj Jhajharia, former GDA Technical Manager; Ms. Hebah Bader, Team Leader - HSE Technical Support at KIPIC; Mr. Muhammad Albuti, Senior Engineer HSSE Planning at Kuwait Petroleum International (Q8); Mr. Ali Abdulla, Vice President at Petrofac, UAE; and Meeting Coordinator Mr. Saeed Faisal, Senior Incident Investigator at Bapco.

The committee unanimously nominated Mr. Saeed Faisal as Vice Chairman of the HSE Committee of GDA.



## **TECHNICAL COMMITTEE MEETINGS** JULY - SEPTEMBER 2023



Research & Lab Technical Committee #4 Virtual Meeting held on 11 July 2023



HSE Technical Committee #19 Virtual Meeting held on 25 July 2023



Industry Trends Technical Committee #17 Virtual Meeting held on 22 August 2023



OPEX Technical Committee #36 Virtual Meeting held on 25 July 2023



Technology Technical Committee #10 Virtual Meeting held on 26 July 2023



GDA Digitalization Technical Committee #21 Virtual Meeting held on 29 August 2023



Industry Trends Technical Committee #20 Virtual Meeting held on 8 August 2023



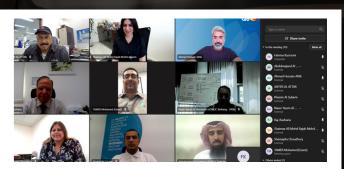
PM Technical Committee #24 Physical Meeting held on 16 - 17 August 2023 at Bapco, Awali



OPEX Technical Committee #37 Virtual Meeting held on 6 September 2023



COM & STUP Technical Committee #22 Physical Meeting held on 23 - 24 August 2023 at Bapco, Awali



Research & Lab Technical Committee #5 Virtual Meeting held on 30 August 2023



HSE Technical Committee #20 Physical Meeting held on 13 - 14 September 2023 at Bapco, Awali

## **TECHNICAL COMMITTEE MEETINGS** JULY - SEPTEMBER 2023



Energy Management Technical Committee #19 Virtual Meeting held on 13 September 2023



Research & Lab Technical Committee #6 Virtual Meeting held on 25 September 2023





GDA CONVERSATIONS Webinar Series Episode 23

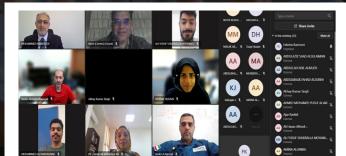
# OPTIMIZING **ENERGY EFFICIENCY**



19 SEPTEMBER 2023 (-) 1:00 PM BAHRAIN TIME

**OPTIMIZING ENERGY EFFICIENCY: INSIGHTS FROM THERMODYNAMIC ANALYSIS, ADVANCED ENERGY TOPICS, AND AL-ZOUR REFINERY FIRED HEATERS** 

TUE, 19 SEPTEMBER 2023 - 1:00 PM BAHRAIN TIME



GDA Connect Dry Run Virtual Meeting #18 held on 18 September 2023



GDA Energy Episode #23 Virtual Meeting held on 19 September 2023

## **GDA CONVERSATIONS** Webinar Series Episode 23



**Thermodynamic Analysis Study** of the Asset Utilization Impact on Specific Energy Consumption by Mohammed Bani-Oraba Senior Energy Engineer - OQ

**Advanced Energy Topics** by Adil Al Hinai Senior Energy Engineer - OQ



Al-Zour Refinery Fired Heaters Optimization by Hussain Almesri Process Engineer - KIPIC

### **COURSES BY**

# **aspen**tech

### **UPCOMING COURSE**

Course Title Date		Aspentech Price list	GDA Member price	Minimum Number of Participants
Introduction to Process Modeling using Aspen HYSYS (Includes Sustainability Module)	Mar 10 to 12, 2024	\$ 3,000	\$ 1,950	12
Aspen HYSYS: Advanced Process Modeling Topics	Mar 13 to 14, 2024	\$ 2,000	\$ 1,300	12
Introduction to Refinery Planning using Aspen PIMS (Includes Sustainability Module)	Mar 18 to 22, 2024	\$ 5,000	\$ 3,250	12
Aspen PIMS: Solving Refinery Planning Problems	Apr 8 to 12, 2024	\$ 5,000	\$ 3,250	12
Aspen HYSYS Dynamics: Introduction to Dynamic Modeling	Apr 16 to 18, 2024	\$ 3,000	\$ 1,950	12
Introduction to Aspen Unified PIMS	Apr 22 to 24, 2024	\$ 3,000	\$ 1,950	12
*10% VAT will apply.			Registe	er Now

Please contact Ms. Fatema Kazrooni on fatema.kazrooni@gda.org.bh and info@gda.org.bh for further details or call 00973 1711 6001

# UPCOMING COURSES WITH HONEYWELL-UOP

Course Title	Date	UOP list price	
Corrosion and Fouling	Jan 14 to18, 2024	\$ 8,700	
Refinery Business Economics	Feb 12 to 14, 2024	\$ 6,600	
	tact <b>Ms. Fatem</b> @ <b>gda.org.bh</b> t		

\* UOP Process Technology courses are available only to UOP license holders and UOP catalyst users on applicable processes.

\* 10% VAT will apply



GDA Member Price	Deadline for Nominations	Minimum Number of Participants
A		
\$ 7,200	Dec 14, 2023	12
\$ 5,500	Jan 12, 2024	12
n fatema ka	ızrooni@gda.org	bh and

tails or call 00973 1711 6001

### **COURSES BY**



### **COURSES BY**



### **UPCOMING COURSE**

Course Title	Date	Bahrain Time	Minimum Number of participations	Axens Price List	GDA Price List
SULFUR RECOVERY UNIT (SRU) COURSE (Claus +TGTU)	Jan 16 to 17, 2024	8AM to 4PM	12	\$ 4,500	\$ 3,500
CONTINUOUS CATALYST REGENERATION REFORMING (CCR) & C5-C6 ISOMERIZATION COURSE	Jan 28 to 30, 2024	8AM to 4PM	12	\$ 5,000	\$ 3,850
HYDROTREATMENTS & HYDROCRACKING COURSE	Feb 13 to 15, 2024	8AM to 4PM	12	\$ 5,000	\$ 3,850
FIRED FURNACES COURSE	Mar 19 to 20, 2024	8AM to 4PM	12	\$ 4,500	\$ 3,500

### **UPCOMING COURSE**

Course Title	Date	Bahrain Time	Minimum Number of participations	GDA Non-Member price	GDA Member price	Deadline for Nominations
NOCN Level 5 Certificate for Certified Solar Photovoltaic Practitioner	Jan 7 to 18, 2024	8AM to 4PM	12	\$ 4,000	\$ 3,200	Dec 4, 2023
NOCN Level 5 Certificate for Certified Energy Efficiency Practitioner	Jan 21 to Feb 1, 2024	8AM to 4PM	12	\$ 4,000	\$ 3,200	Dec 18, 2023
Material Failure Root Cause Analysis (RCA): Damage due to Hydrogen Embrittlement	Feb 4 to 5, 2024	8AM to 4PM	12	Customized Course - No LP Available	\$ 1,600	Jan 2, 2024

\*10% VAT will apply.

**Register Now** 

\*10% VAT will apply.

Please contact Ms. Fatema Kazrooni on fatema.kazrooni@gda.org.bh and info@gda.org.bh for further details or call 00973 1711 6001

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	(LA)	

**Register Now** 

# Is Artificial Intelligence (AI) Scary?

By: Raj Jhajharia Istanbul University Cerrahpasa Vocational School of Technical Sciences

every fabric of our personal and professional lives, people are worried about being replaced by the robots in the not so distant future. Is this going to be true? Will the robots rule over humans?

Let us first decipher what does Artificial Intelligence mean? Artificial intelligence (AI) is a term for simulated intelligence in machines. These machines are programmed to "think" like a human and mimic the way a person acts. Artificial intelligence is based around the idea that human intelligence can be defined in such exact terms that a machine can mimic it.

Let us now look at how human intelligence works.

Judea Pearl and Dana Mackenzie in their book, "The Book of Why" explain. Human intelligence essentially works in three ways: Seeing or Observing, Doing or Intervening and Imagining; retrospection or understanding.

Through observation, we associate the observed fact with a conclusion or belief. In this approach, we limit ourselves to the passively collected data and try to find a pattern which may help us predict a conclusion.

observed data, which is the basis of prediction. We ask, "What would be the result, if I did something else? Or, how can I make this happen?" No amount of passively collected data can help us answer such questions. And yet, we humans often use this approach effortlessly in making-up our minds.

Through imagining, retrospection or understanding, we go back in time, change history, and ask, "What would have happened, if I had not taken that job?" Passively collected data become ineffective to answer such questions. We cannot run an experiment of denying job to a person who has already worked on that job and compare the results. Yet the human mind makes such explanation-seeking inferences reliably and repeatedly.

George Bernard Shaw has famously said, "There are those that look at things the way they are, and ask why? I dream of things that never were, and ask why not?"

Now the question is, "Can this vast human intelligence be defined in such exact terms that a machine can mimic it?" If ves, we have reasons to fear Al.

Presently, machine learning programs (including deep neural networks) operate almost entirely in an associational mode. They are driven by a set of observations to which they attempt

# ARTICLES



While the media is abuzz with the application of AI in almost to fit a function. However, complex this function may be, raw data still drives the fitted function. The programmed driverless car cannot predict how a pedestrian under the influence of alcohol will respond to a honking horn. A recent fatal incident involving a driverless car and a pedestrian in the USA is a testimony of such serious flaws.

> Mathematicians and Scientists have realized such serious limitations of the machines and are busy developing "Causal Models" that may try to mimic human way of thinking, but will they come even close? We must not forget that a machine is after all developed by a human mind. And hence, no matter how advanced they may become, they will remain subservient to human mind.

> Having said this, AI powered machines will take over all those jobs which are currently based on passively collected data and their analyses. However, this shouldn't be viewed as a threat. Indeed, this is an opportunity for humans to rise above the current level of working, and tap into those areas of their minds which have remained dormant all this time.

> Therefore, upskilling and reskilling is the only way forward for the human race to sustain and thrive in the future.

Through doing or intervening, we mentally try to change the I suggest taking following steps to capitalize on this golden opportunity of the AI knocking at our future doors:

- Make friendship with the Al. It is here to help us do our work more efficiently and effectively. Indeed, we should call it "Augmented Intelligence", instead of "Artificial Intelligence".
- Learn and use available and evolving AI tools in day-to-day work. Many of them are freely available, at least at present. Make a habit of getting familiar with one tool every week. A word of caution: don't share your confidential information/document with any online tool.
- Focus on sharpening your soft skills: communication, teamwork, leadership, time management, adaptability, problem-solving, critical thinking, work ethic, creativity and emotional intelligence.
- Make your life simple. Declutter all those aspects that create confusion and irritation in the mind.
- Spend some time with the nature and practice meditation. This will help you rooted in the reality, lest you get lost in the virtual world.
- Search for the real purpose of your life and what makes you deeply happy. Direct your energy towards such goals.
- Remember: you are a unique creation of the nature with unlimited capacity to think and create.

# **CONTRIBUTION MECHANISMS OF PROJECT MANAGERS' BEHAVIOURAL COMPETENCIES TOWARDS THE SUCCESS OF OIL AND GAS PROJECTS**

By: Hazem Abdulla & Catherine McCauley-Smith

The Oil and Gas (O&G) industry is complex and hazardous. Its development relies on projects, where project management is a human-centred profession. Therefore, competent project managers (PMs) play a crucial role in this dynamic industry. Existing literature has primarily focused on the quantitative impact of project managers' competencies (PMCs) on project success (PS). However, there has been little attention given to understanding the 'how' behind the contributions of PMCs, specifically behavioural competencies (BCs), to PS. As a result, this research aims to explore the perspectives of PMs

regarding the contributions of BCs to the success of projects in the O&G industry. This paper takes an interpretive stance. Data was gathered through twenty semi-structured interviews with PMs from a refinery in the Kingdom of Bahrain and analysed using thematic analysis with the aid of NVIVO 12. The study revealed the ways in which BCs contribute to project success in the O&G industry. Five distinct mechanisms were identified for BCs' contributions to PS: fostering team cohesiveness, enhancing work clarity, controlling project activities, conveying

technical competencies, and advancing PMs' careers. This study was conducted in an under-researched industry within a developing country and has provided a deeper understanding of the means by which BCs contribute to PS, rather than merely presenting them as an extensive 'shopping lisť.

# Adnoc first in Middle East to get **ISCC** certification to produce sustainable aviation fuel

By: Deena Kamel Journalist

The company will supply its SAF to international airlines at Abu Dhabi Airport as the global aviation industry seeks to decarbonise its operations

Abu Dhabi National Oil Company (Adnoc)'s Ruwais refinery received the International Sustainability Carbon Certification to produce sustainable aviation fuel (SAF), in a first for a company in the Middle East, as the state energy company forges ahead with its decarbonisation plan.

The Germany-based ISCC is a certification body empowered by the European Union to verify the sustainability of fuel.

The international certification will allow Adnoc to supply its SAF to international airlines at Abu Dhabi International Airport, the company said on Tuesday.

The first batch, enough to fuel a return flight in a Boeing 787-10 Dreamliner between Abu Dhabi and Paris, will be available later this month

"The development of sustainable aviation fuel is a key part of our strategy to deliver lower carbon fuels to our customers," Sultan Al Bigishi, acting chief executive of Adnoc Refining, said.

"We are committed to supporting the aviation industry's effort to ramp-up the use of sustainable aviation fuel as one of the key pillars to decarbonise air travel."

Adnoc's SAF is produced from used cooking oil feedstock that is blended with jet fuel at the company's Ruwais refinery.

SAF refers to alternative fuels made from renewable sources that are used to power aircraft and is crucial for the global aviation industry to reach its net-zero goal by 2050.

However, its adoption is still in its early stages due to smallscale production and the green fuel's higher cost, compared with conventional kerosene.

The International Air Transport Association estimates that SAF could contribute about 65 per cent of the reduction in emissions needed by the aviation industry to reach its net-zero emissions by the middle of the century.

However, producing the required quantities of the alternative fuel would require large areas of land and natural resources. Air passengers are most likely have to foot the bill for switching to the cleaner fuel as the airline industry says its razor-thin profit margins means it has to pass on some of the cost to passengers, lata said.

### **ALTERNATIVE FUEL**

alternative fuel makes up just 0.15 per cent of the global jet fuel supply, lata said earlier.



The UAE, the Middle East's travel and tourism hub, revealed its National Sustainable Aviation Fuel Road Map in January, which aims to accelerate the decarbonisation of the aviation sector, as stated by the Ministry of Energy and Infrastructure's website.

The UAE, also a major global aviation hub, is home to long-haul airlines Emirates and Etihad Airways and budget specialists Air Arabia, flydubai, Wizz Air Abu Dhabi and Air Arabia Abu Dhabi. The country has pledged to reach net zero by 2050, backed by a Dh600 billion investment in clean and renewable energy sources over the next three decades.

Adnoc said it is working to include SAF in its portfolio in response to customer demand, thereby contributing to the aviation industry's sustainability.

Adnoc Global Trading is responsible for sourcing suitable bio feedstocks from the market into refinery operations.

"As our face to the market, trading can ramp up these activities to supply global and domestic customers with lowercarbon and more sustainable alternative fuels, products and feedstocks," the company said.

### FORWARD STEP

The ISCC has issued more than 50 certificates in SAF supply chains to date, of which more than 30 fall under ISCC Corsia, with more certifications in the pipeline, the organisation's website said.

"This certification is an important step forward on our sustainability journey and will open up a whole host of new opportunities both in the UAE and beyond," Ahmad Bin Thalith, chief executive of Adnoc Global Trading, said.

"Trading biofuels enables Adnoc to offer our global and domestic customers more sustainable alternatives. As first adopters in the region, we are well-placed to meet the drive in market demand for these sought-after, internationally certified products."

Emirates on October 2 said it signed an agreement with Shell Aviation for the supply of more than 300,000 gallons of blended sustainable aviation fuel for use at its hub in Dubai. The first delivery under the agreement is expected to start Airlines are buying every single drop of available SAF but the before the end of the year, making it the first time that the clean fuel is supplied through the Dubai International Airport's fuelling system, Emirates said on Monday.

### LEWAS AWARDS & SYMPOSIUM 2023

21-22 November 2023 | Kingdom of Saudi Arabia



### AWARD NOMINATIONS OPEN

### Powering Tomorrow.

The Leadership Excellence for Women Awards celebrates outstanding women from the Middle East in the energy industry who have excelled professionally and personally through their unmatched contribution in the areas of leadership, innovation, talent, research and outreach. It also recognises the contributions of male allies and organisations, working towards bridging gender disparity.

Open to women and male allies of age 18 onwards and all nationalities based in the Middle East, LEWAS encourages submissions from technical and non-technical backgrounds, including government and private entities to participate as long as they have worked in the energy sector.

### 2023 AWARD CATEGORIES



Student

Rising

Star

Academic

Achievement



Woman of Achievement





Achievement University Professor

Leading with Excellence

Academic

Corporate Male Champion



Corporate Excellence

Open to all women, male allies, and organisations from the energy sector in the Middle East

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 Electricity Coal

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A platform designed to create an unprecedented bridge between the academia and industry sectors.



	DYNAMIC COLLABORATION
	Facilitating dynamic, productive collaboration between industry and academia
(	SUSTAINABILITY FOCUS
	Designed to drive sustainable solutions for

the energy industry

### Why GDA Connect?

At the heart of GDA Connect is our aspiration to harness the combined strengths of academic brilliance and industry expertise. Here's what we've meticulously crafted for you:

- **IDEA:** Don't let those moments of inspiration fade away. Share them, gather support, and watch as they evolve into impactful projects.
- PROJECT: Have you stumbled upon an intriguing idea from a student, researcher, or an industry SME? Turn that spark into a full-fledged project and watch it come alive!
- **Q&A:** Dive into collective wisdom. Whether you've a query or a piece of advice, our community is here.
- SITE VISIT: Go beyond screens. Organize site visits to experience, explore, and evaluate ideas hands-on.
- **WORKSHOP:** Host or be a part of immersive workshops that marry theory with practice, ensuring tangible outcomes.

For support, email: saher@e3-worldwide.com

### MULTI-DISCIPLINARY EXPERTISE

Brings together experts across disciplines to solve complex problems

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Ensures efficient collaboration by connecting the right people to the right projects.



### **GDA Excellence Awards**

Recognises and Promotes the Best Knowledge Sharing Efforts in the Spirit of Mutual Collaboration and Contributions

### Categories

Team Excellence Award Best Performing Technical Committee

Individual Excellence Awards Best Performing Subject Matter Expert (SME) Best Performing Member's Single Point of Contact (SPOC)





الإتحاد الخطيجي للتكرير Gulf Downstream Association

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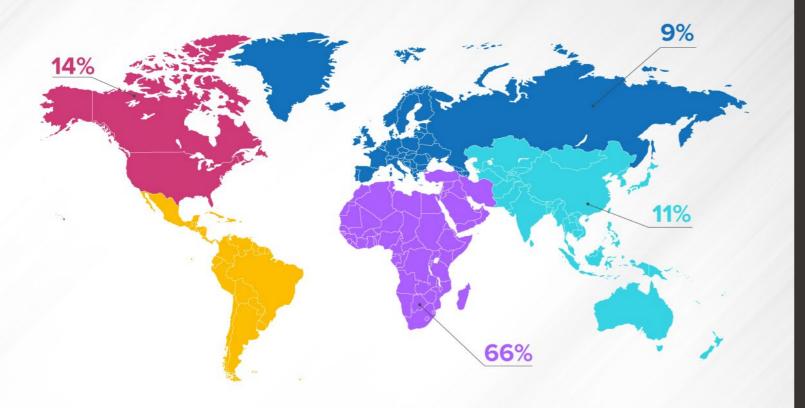
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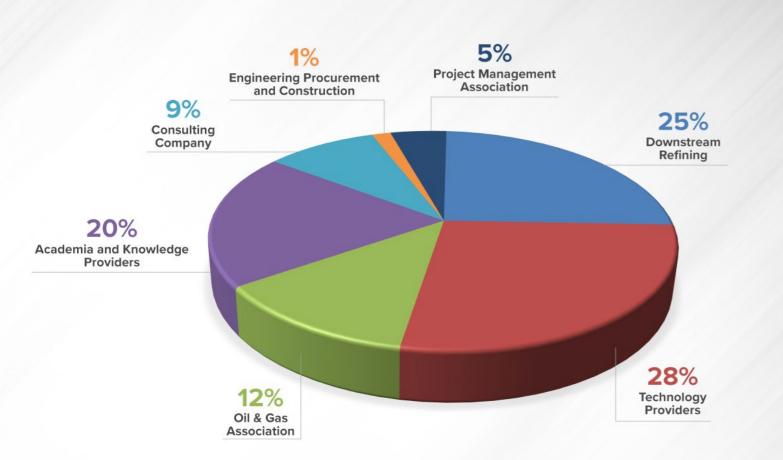
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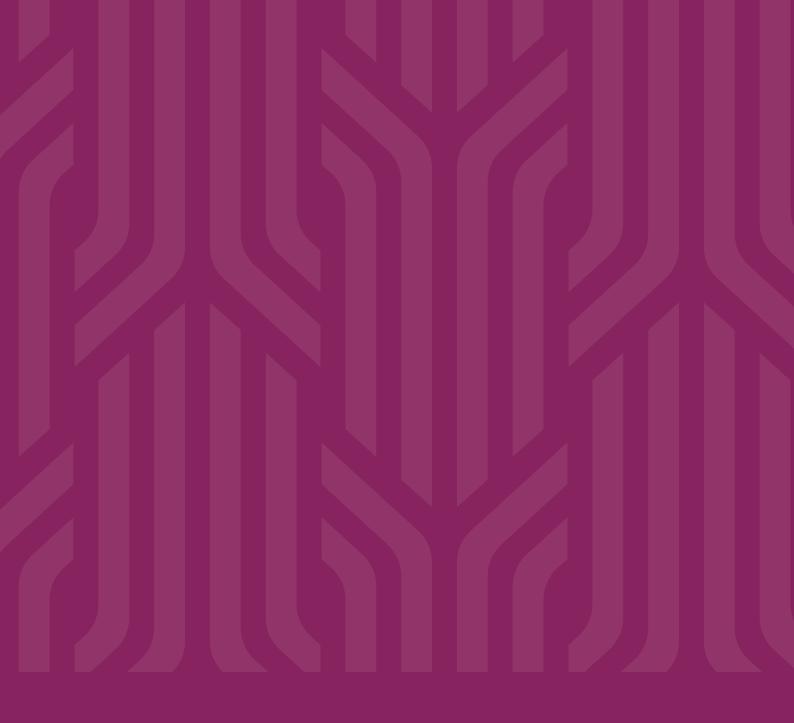
### **GDA MEMBERS** Geographical Distribution



### **GDA MEMBERS** Industrial Activity Diversification







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