Arab-German Yearbook 2022/23

Construction, Energy and Consulting

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From the first aluminium smelter in the Middle East to the world's largest aluminium smelter ex-China, Alba has been a trailblazer in Production, Sustainability, Safety and Operational Efficiency. Backed by national expertise over five decades, we intend to remain competitive while charting a path to social prosperity and greater economic contribution for Bahrain.

Arab-German Yearbook 2022/23

Construction, Energy and Consulting

Ghorfa
غرفة التجارة والصناعة العربية الألمانية
Arab-German Chamber of Commerce and Industry e.V.

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Preface

The smart cities, sustainable construction projects, and energy transformations we see today testify to the pioneering revolutionary spirit that can be seen in the GCC countries and throughout the whole Arab world. As a high-tech location and the fourth-largest industrial nation in the world, Germany is one of the long-standing and trusted partners that enjoys a great reputation in the Arab world, especially in the energy and construction sectors. Advanced Technology is the key ingredient to success in the future; we are delighted to present our members, business partners and the wide Arab-German business community an exclusive selection of high-profile projects in the 12th edition of the Arab-German Yearbook "Construction, Energy and Consulting". This year`s edition focuses on development topics; different chapters represent the contributing companies` approaches to creating a secure, environmentally-friendly, and economically successful future. Dorsch Group, for example, the largest planning office in Germany, is developing a new understanding of urban living space. AS+P, one of the most important architecture firms in Germany, shows in its report how to create a city that becomes a fully integrated "People's Place" and serves the needs of its inhabitants.

Dr. Peter Ramsauer

Abdulaziz Al-Mikhlafi

Regarding the renewable energies sector, German companies play a major role in technological advancements, as well as in concepts for improved energy efficiency and diversification plans for energy sources. The reports of the GIZ on Hydrogen Diplomacy, or the Bonn Climate Project on Hydrogen Economy for Arab Countries, show how German companies are committed to a more sustainable and diversified energy sector worldwide.

Sustainability is the order of the day; the reports from Alba Bahrain, the world`s largest aluminium smelter ex-China, on its "Spent Pot Lining Treatment Plant" or Wilo on sustainable solutions for the World Cup stadiums illustrate how different companies are implementing this concept. BASF for example is contributing to Egypt`s future through its Best Practices in ESG approach. Germany is not only leading in the energy sector, but its engineers, architects, and constructors have a considerable impact on the construction sector worldwide. This is exemplified by the execution of infrastructure projects, sustainable environmental and energy projects. Siemens, for example, provided the smart infrastructure for the Expo Dubai 2020.

The Ghorfa serves as a competence centre for business relations between Germany and the Arab world, it promotes and strengthens their business relations in various fields of business. This publication represents an important contribution to German-Arab business relations, which is why we would like to thank the contributing companies for their valuable insights, Ms. Santina Robens for her commitment and dedication to the publication, and Mr. Fadhl Al-Romaima for the layout and design. We hope you enjoy reading this book and wish you inspiration for further reference projects.

Dr. Peter Ramsauer
President
Federal Minister ret.

Abdulaziz Al-Mikhlafi
Secretary General

» These days, many new urban districts are taking shape and point the way to the city of the future. Unlike in existing neighbourhoods, where transformation processes are rather lengthy, new developments offer great chances to come up with new concepts for urban living «

Joachim Schares, Managing Director, AS+P Albert Speer + Partner GmbH

Urban Planning

Awards winning Master Planning: The Prince Mohammed Bin Salman Non Profit City Master Plan won the Iconic Award 2021 for its “forward-looking urban planning that makes life worth living” (jury citation) as well as the German Design Award 2022. © AS+P Albert Speer + Partner GmbH / visualization: V1

Holistic Master Planning – a Living Process to Drive Vision: The Prince Mohammed Bin Salman Non Profit City General Master Plan in Riyadh

AS+P Albert Speer + Partner GmbH

These days, many new urban districts are taking shape and point the way to the city of the future. Unlike in existing neighbourhoods, where transformation processes are rather lengthy, new developments offer great chances to come up with new concepts for urban living. The Prince Mohammed Bin Salman Non Profit City General Master Plan in Riyadh is such a “spectacular project that promises a high quality of life through a contemporary design that gives consideration to all relevant aspects of forward-looking urban planning” according to the jury´s judgement when awarding AS+P with the renowned Iconic Award 2021. On top of this, the General Master Plan also won the German Design Award 2022, confirming again that there is even more to AS+P´s holistic approach: It is a “living” planning process on a more granular scale.

The big challenge lies in creating and harnessing such opportunities where urban growth can be steered to be more sustainable, more resilient, more social and reconcilable with the available space. AS+P´s holistic planning approach includes an overall mobility concept, a fair distribution and use of public space, and the development of robust city structures that allow for future flexibility.

Connecting people through space and arts: The Forum Bridge links the Cluster highlights as well as the Wadi Park base with the plateau area.

Creating integrated neighbourhoods by overlaying systems

In each planning process, the principles of sustainable development need to be taken into account right from the very beginning. The 340-hectare "Prince Mohammed Bin Salman Non Profit City General Master Plan" in Western Riyadh alongside Wadi Hannifah pursues exactly this idea of holistic planning, from the first masterplan for the district and the design of the urban space through to the architecture, landscape architecture and mobility.

Riyadh´s new Innovation Cluster is designed as a catalyst propelling Saudi Arabia´s innovation capacity into competitive ranks amongst the top nations worldwide. Its centre is anchored by 3 spatial elements that host the city´s main assets and destinations: a core area and hub for education, a district dedicated to retail and cultural programs, and the main artery integrating flexible workspaces, residential and public amenities such as an Arts Gallery. Emerging as the 1st price winner in a multilevel international competition, AS+P is developing an attractive mix of new forms of working, living, culture, entertainment, education and leisure. The district is designed as a cluster of short routes where all housing, work and leisure offerings are within walking distance or can be reached by bicycle within the shortest time possible.

The backbone of the urban planning concept, the main artery, is the so called Al-Mishrak, a "Highstreet of Tomorrow". Like the historically developed cities, the main functions of public life and culture are all grouped around central plazas together with workplaces and housing. These "Makers' Places" are the key points for interaction between the district´s target groups: a young start-up scene and innovators working on projects in various spheres of digital development and application. Thanks to the short ways, all in the neighbourhood can easily exchange ideas about their developments, share their innovations and encourage one another.

For shade and cooling, centuries-old techniques typical of the location are being employed, such as wind towers and evaporative cooling. Through intelligent building and suitable greening concepts, a microclimate is created allowing a longer and more pleasant use of the public space even in the hot summertime. A network of landscaped corridors including

trees shading the paths and with green spaces incorporating water features will foster a comfortable microclimate. Even more, the corridors are formed in such a way that they divert water to the natural dry rivers, the wadis. This decentral and sustainable rainwater strategy is a "low-tech" answer to the question on how we can equip our urban areas to deal with increasing extreme weather conditions in the future. These landscaped spaces are essentially greened with native, drought-resistant plants that don't need much water, and catered by a sustainable irrigation system.

It is this integrative overlay of systems, combined with the help of digital tools such as Building Information Modelling (BIM) and Geographic Information System (GIS), that allows urban planners to think ahead and create synergies. This is especially true when it comes to mobility.

New ideas for mobility and transport to redefine public spaces

Right from the very beginning, the master planning focused on the fair distribution and use of public space for all user groups. In AS+P´s "Living Street" concept all users have the same right to use the public space and hence, the relationship between spaces used for circulation, on the one hand, and spending time, on the other hand, is newly defined. The urban structure is arranged in such a way that pedestrians and cyclists can make use of a network of routes that is as comprehensive as possible.

Public transport is offered via an "on-demand" system at a short, walkable distance. Road traffic, meanwhile, is limited to just a few routes and avoided as best as possible.

A new landmark in Riyadh: the Lighthouse Bridge is a double cable-stay suspension structure with one central pylon taking the full load of the two 200m long spans. © AS+P Albert Speer + Partner GmbH / visualization: V1

Consequently, individual roads are less frequented and can be opened to all users as public space with alternative uses, whether this may be playing children or senior citizens socializing in the local square. Meeting the neighbours has never been easier!

This holistic approach means a shift away from traditional urban planning foremost focusing on road traffic and the fastest possible, uncurbed transportation of people and materials within cities. The city of the future needs to be an integrative urban space perceived as a stage for urban living.

One of the key objectives of the Innovation Cluster is to develop human centred neighbourhoods. The integration of key public amenities, such as neighbourhood greens, playgrounds, central public facilities including mosques or kindergardens enriches the streetscape and demands a reduction of the overall travel speed.

A sustainable surface water strategy allows a localised drainage into the nearby Wadi system mimicking the natural flow of the rainwater and enhancing the overall resilience of the development.

The design of neighbourhoods, like in the Residential District in the Eastern part of the Innovation Cluster, is based on the rich vernacular language of the Salmani Architecture. Especially the entrances to the individual units are linked to the Living Street design with both forming one entity. Multiple housing types have been developed on a modular basis allowing different street configurations with individual character. The careful design of the facades ensures the required privacy. The thought-through strategy of the neighbourhoods reaches back to the essence of communities in the Old Riyadh with its narrow siccas and closely arranged houses, allowing a modern nowadays lifestyle.

The desire for urban living and working in an area that is well connected in terms of both its landscaping and its society has become even stronger in the current pandemic. And the master planning is catering to this. As early as the first stage of the mobility concept, above all pedestrians, cyclists, e-scooters and e-mopeds have been incorporated into the urban fabric. This micro-mobility concept is rounded off with an efficient local public transport network with connections to the new metro system and central parking space management with localised neighbourhood garages. Overall, the unsealed and greened open spaces will have a positive effect on the urban climate: as a strategically planned network of natural and near-natural spaces with different landscaped features and diverse functions.

Two landmark bridges are reflecting the increasing significance of slow mobility: Prince Mohammed Bin Salman Non Profit City shall house two unique pedestrian bridges crossing the pristine Wadi Hanifah. At strategic locations, the two bridges join the otherwise fragmented areas and thus support the human centred design around the walkable and cycling-prioritized development. This architectural statement is celebrating the natural mobility

Residential District: Especially the entrances to the individual units are linked to the Living Street design with both forming one entity.
© AS+P Albert Speer + Partner GmbH / visualization: REDVERTEX

mode of this project and a new conception of mobility – a role model for future developments.

Master plan X.0 – a living process

In comparison to new cities created on the drawing board, many long existing Arabian and European Cities, characterized by strong diversity in relatively small spaces, organically grew over the centuries. So, the development of these cities has been an ongoing feedback loop. Similarly, the basic strategy of the ongoing master planning for the Innovation Cluster was not established as a once-for-all-approach. Rather organically, this master plan is more a living document that has been adapted step by step to its own development while providing an overarching framework plan. For example, once the architecture of the Arts Institute was selected in a design competition, its integration into the urban context could then be adapted and the urban design finetuned by defining alignments from one building to the other including public spaces. By this rather granular approach, the fabric of a new district can grow more organically.

The next big challenge, alongside the planning of new cities and districts, will now be to adapt existing towns and cities, so that they are equipped for the climate change, growing energy consume and needs of the Generation Alpha. We shall take our learnings and experiences from the master planning of tomorrow´s new districts to ensure that existing cities remain the attractive epicentres of innovation and interaction for the centuries to come.

Joachim Schares
Managing Director

AS+P Albert Speer + Partner GmbH

© AS+P Albert Speer + Partner GmbH / foto: OLAF BECKER

Jürgen Häpp
Associated Partner

AS+P Albert Speer + Partner GmbH

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Spotlight central area: Bird view of the Arts Axis in the heart of the Prince Mohammed Bin Salman Non Profit City.
© AS+P Albert Speer + Partner GmbH / visualization: V1

» As ever more cities seek the benefits of digitalization, no region is better positioned than the Middle East to serve as their beacon and benchmark. «

Helmut von Struve, CEO, Siemens in the Middle East

Digital Transformation

Smart Cities Find Fertile Ground in the Middle East

Siemens Middle East

As ever more cities seek the benefits of digitalization, no region is better positioned than the Middle East to serve as their beacon and benchmark.

Smart cities and districts are emerging in several parts of the Middle East, a region recognized as the historic cradle of urban civilization. In the United Arab Emirates, this year's Expo 2020 Dubai served as the world's biggest proving ground for smart-city technologies. Following on Dubai's success, Egypt and Saudi Arabia are developing projects of their own. Each in its own way points a way forward for other communities that aspire to increase efficiency, safety, sustainability and comfort for the people who live and work in them.

Digital technologies enable buildings to self-regulate their use of energy and water and thereby shrink their carbon footprint. They also optimize efficiency and make buildings more secure and enjoyable for employees and residents. On a broader scale, planners can use digital tools to connect buildings and infrastructure together to make smart districts and cities, as Siemens did in co-creating a blueprint for future smart cities at Expo.

The digitalization of buildings, campuses and urban communities is advancing amid two larger global trends: breakneck urbanization and the transition from fossil fuels to renewable energy. The share of people living in cities will jump from 55% today to about 70% by 2050, according to the United Nations. Meanwhile, the Boston

Consulting Group forecast that the world's energy supply will need to triple for the energy transition to succeed.

Growth in digitalization and electric transportation is projected to boost the demand for electricity by a fifth in this decade alone. Because buildings generate 40% of all greenhouse gases, they represent huge potential for improvements in efficiency. It's not just a matter of creating new smart buildings; there's an enormous need to retrofit old structures to make them smart as well.

Activities to produce, distribute and store electricity at the edge of a power grid add to the momentum of this expanding digital market. Because the grid edge is fragmented, it can accommodate small-scale renewable energy systems much more easily than a centralized grid. Government policies in the Middle East to achieve carbon neutrality are also helping to drive this digital growth.

Most connected smart city

The world's most connected smart city sprang to life at Expo 2020 Dubai. For six months ending on March 31, millions of visitors to Expo experienced a purpose-built, resource-efficient and digitally linked urban environment. These visitors wouldn't have noticed how Expo's infrastructure saved energy and water, ensured safety, increased security and enhanced comfort – because the technology ran seamlessly and invisibly, reducing emissions and optimizing operations.

Siemens Navigator technology, powered by MindSphere, served as Expo's central nervous system, monitoring and controlled energy use at more than 130 buildings. Desigo integrated building management functions such as heating, ventilation, air conditioning, power, lighting and fire safety. Siveillance Control Pro linked 15,000

Visitors to Siemens customer experience center at Expo 2020 Dubai © Siemens

cameras, and Sipass connected 5,500 doors, to keep visitors safe.

Expo proved that smart cities work. And Expo has a tangible legacy: Its site will form the nucleus of District 2020, a community for 145,000 inhabitants and workers in start-ups and multinational corporations, including Siemens, that focus on innovation and sustainability.

Egypt's New Administrative Capital

Egypt is developing an even bigger showcase for smart cities: A $58 billion New Administrative Capital. Conceived partly to ease congestion in Cairo, this project to the east of Egypt's principal city will eventually be home to 6.5 million people. The new capital will deploy the latest security and fire safety systems, access controls and other smart solutions across hundreds of buildings, raising the standards for efficiency, resilience and sustainability in the most populous Arab nation.

In a parallel project, Egypt plans to build its first high-speed electrical rail network, which will connect the New Administrative Capital with other cities. This fully electrified train system will cut carbon emissions by 70% compared with current emissions from car and bus transportation.

Smart cities and the buildings are still in their infancy. The next stage in urban transformation will see self-adaptive buildings that incorporate automated analytics and artificial intelligence. They'll be able to anticipate their energy needs based on weather forecasts, for example, and they'll be much more efficient.

Buildings that think and predict

By scrutinizing a vast pool of data gathered by sensors, smart buildings will be able to generate and deploy algorithms that can predict – not just the weather, but patterns of energy consumption and even their occupants' behavior.

A smart office building won't just dim the lights and turn down the air-conditioning at night. It will adjust the lighting and air quality in precise, phased locations

so that a security guard can make his or her nocturnal rounds. And it will be able to distinguish a patrolling security guard from someone else.

Virtual representations of physical objects and systems are crucial enablers of sustainable infrastructure. Without such digital twins for buildings and electricity networks, digitalization of business in these domains wouldn't be possible. Digitalization in turn helps companies and countries make progress toward their targets for reduced carbon emissions.

Saudi Arabia, with the Arab world's largest economy, is embracing digital technologies to help diversify away from oil and ensure its long-term prosperity. Digitalization is a central element of Saudi Vision 2030. It also features prominently in the country's National Industrial Development and Logistics, Human Capital Development, and the National Transformation programs.

The Saudi government seeks to harness and make use of data to create what one might call a Digital Kingdom. It aims to develop industries, build cities, curb carbon emissions, provide technical skills and create jobs. People in the Digital Kingdom would live, work, learn and play in smart communities. They'd benefit from smart infrastructure, digital traffic management, and efficient management of air quality and water. They'd have access to charging networks for electric vehicles and driverless transit systems.

Factories in the Digital Kingdom would run at maximum capacity, and technicians would service them remotely and upgrade them quickly to meet changing consumer preferences. Young Saudis stand to gain the most from the country's digitalization, through virtual education, digital skills training and opportunities for employment.

Digital solutions in Riyadh

This vision of the future has roots in reality. The Saudi capital Riyadh already ranks fifth among the capitals of all G20 nations in terms of smart city development. This status highlights Riyadh's ability to adopt the latest technologies and digital solutions. In one example, smart

Expo 2020 Dubai Sustainability Pavilion © Siemens

© Siemens Mobility

phone apps and digital platforms run by the Saudi government helped to maintain and improve public safety during the Covid-19 pandemic.

Like most big Saudi cities, Riyadh has experienced a surge in population over the past 20 years. This growth has resulted in urban sprawl, traffic safety issues, a high level of carbon emissions, and strain on critical infrastructure.

But Saudi Arabia's smart cities campaign is making a positive impact. Riyadh is building a driverless Metro system, the country's largest transportation project, to help unclog roads and shorten travel times. The city also plans one of the world's most ambitious urban forestation projects -- Green Riyadh – which will increase green space by planting trees and watering them with recycled water. More trees in the city should lead to better air quality and lower temperatures.

Riyadh is just one of 17 Saudi cities selected for smart city projects, further evidence of the government's commitment to digitalization.

Smart cities won't solve all of humanity's problems. But Expo 2020 Dubai, Egypt and Saudi Arabia demonstrate the variety and scope of improvements that digitalization can bring to city dwellers and our increasingly crowded planet. In each of these cases, firm government support and a long-term investment outlook have been crucial factors of success.

As at the ancient cities of Mesopotamia, the Middle East finds itself once again at the frontiers of urban civilization.

Helmut von Struve
CEO

Siemens in the Middle East


© Siemens

» The Saudi Green Initiative works on increasing Saudi Arabia's reliance on clean energy, offsetting emissions, and protecting the environment, in line with Vision 2030 «

Hany Labib, Director, External Operations, Dorsch Group

Urban Building and Public Space

Saudi Green Initiative – A Leap Towards Regional Sustainable Future

Dorsch Group

Advancing Sustainability & Environmental initiatives for a greener future. This article would elaborate on Saudi's Green Initiative which at this stage encompasses over SAR 700 billion investment in a green economy and Dorsch's role in aiding its advancement and attaining an overall greener future.

With the launch of the Saudi Green Initiative, The Arabian Kingdom has reaffirmed its belief in a sustainable future for all. The first wave of more than 60 initiatives announced under SGI, represent over SAR 700 billion investment to contribute to the growth of the green economy.

The Saudi Green Initiative works on increasing Saudi Arabia's reliance on clean energy, offsetting emissions, and protecting the environment, in line with Vision 2030. It aims to improve quality of life and protect future generations.

Green Riyadh Program – An Ambitious Vision for the "Gardens City"

Riyadh's urban area is 3,115 km2 with a developed area of 1,400 km2 and the suburban / rural area around the city is 5,960 km2. The current population is 6.7 million people. The objectives of The Royal Commission for Riyadh City include the comprehensive urban, economic, social and cultural development of Riyadh, handling the issues related to environment management and protection, and providing the city with the necessary public services and utilities.

The Royal Commission for Riyadh City is the organizational, planning, executive and coordinating body responsible for the development and implementation of the Green Riyadh Program. A program to monitor and effectively manage, increase and enhance urban and suburban greening in the Capital of Saudi Arabia, Riyadh.

The Kingdom aims to plant 10 billion trees, and Riyadh and its surroundings will be the site of 7.5 million of them, through the "Green Riyadh Program". This Program is one of the most ambitious tree-planting projects ever undertaken worldwide. The trees will be selected from those compatible with Riyadh's weather and environment. New irrigation networks will be established to use recycled water. This will raise the quantity of recycled water being used across the city.

Riyadh was once known as the "gardens city"; however, urban sprawl has changed the city's character. The city has developed significant green infrastructure projects such as Wadi Hanifa, the Diplomatic Quarter, the King Abdul Aziz Historical Centre, the King Fahd Road, King Salman Park and Salam Park, nevertheless, the city's vegetation and canopy cover do not exceed 1.51% and 0.41% respectively.

Understanding the above, The Royal Commission for Riyadh City has completed a baseline analysis, developed a "Vision" to increase green coverage in Riyadh and defined the purpose and objectives of the "Green Riyadh" Strategy. The program aims to strategically increase the quality and quantity of all vegetation in both urban and suburban setting and develop a strategically planned interconnected network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services. Implementing such operations represents challenges, due to the climatic conditions as well as the limited resources of the local area.

The Green Riyadh project will contribute to increasing the per capita share of green space, and raise the total green

© Dorsch Group

spaces by planting trees around all city features and facilities as well as in all its provinces. All of the greenings will be watered by recycled water from an irrigation network. The greening initiative will lead to improved air quality and reduced temperatures in the city. As a consequence, this project will encourage Riyadh citizens to follow a healthy lifestyle which is part of the Kingdom's Vision 2030.

In addition, the project will help improve and promote Riyadh's image as an environmentally friendly metropolis, and that it will reduce the capital's energy consumption and ultimately reduce health-care expenditure by promoting healthier lifestyles for its residents.

GRP Nursery – The Center of Excellence

To meet the goals of the "Green Riyadh" Strategy of increasing the green coverage, a new nursery and centre of excellence is being constructed to help to promote growth of the local nursery industry and to improve the quality of locally grown trees and shrubs.

Dorsch Gruppe, a renowned German Engineering Firm established in 1951 and actively operating in more than 40 countries around the globe, through its subsidiary Dorsch Holding GmbH – KSA has been assigned by The Royal Commission for Riyadh City to perform Project Management Consultancy services for the new construction of the GRP Nursery and Center of Excellence, in addition to rehabilitation of the existing nursery located in the Diplomatic Quarter.

The primary objective of the project is to upgrade the facilities as the nursery will be expected to grow trees in a variety of sizes as determined by the needs of the Green Riyadh Program. The project intends to plant 7.5 million trees – About 72 native shade plant species compatible with Riyadh's environment – will be used for the project across the capital

Ecosystem Revolution – Key enablers

The revolutionary project in Riyadh cannot be implemented without some key elements, starting with new water treatment network for irrigation with a daily capacity of 1 million m3, a wide network of plant nurseries to provide the required seedlings and trees, improved urban regulations to enhance afforestation in public and private projects, and most importantly the public awareness initiatives to encourage voluntary engagement.

Saudi Green Initiative – Rewarding Benefits

According to The Kingdom's Vision 2030, the Green Riyadh Program contributes to fulfilling key goals to achieve environmental sustainability, build a vital community, and improve economic efficiency across the city sectors.

From an environmental point of view, increasing the vegetation and canopy cover shall reduce ambient temperature by 2 Celsius degrees during summer season and by 8-15 Celsius degrees in selected intensively afforested locations across the city, as well as the dust concentration in the air. Thus, improving the air quality by reducing CO2 concentration by 3-6%. Not to mention the enhancement of biological diversity via natural habitats preservation.

On Municipal level, the initiative will not only improve the urban landscape of Riyadh, but shall achieve some of National Transformation Program goals, such as increasing the green spaces, reducing water waste, improving flood drainage network efficiency, and better utilization of treated wastewater. This will reflect predominantly on the City's Infrastructure readiness for handling rainwater and minimize the flood hazards. Even power consumption can be reduced by 650 gigawatt/hour, through encouraging the principles of Green Building techniques that use green ceilings and walls.

From the Socio-Economical standpoint, the afforestation efforts will improve quality of life and promote Riyadh's position among the world's top livable cities. The goals of "Quality of Life program" will be met by creating open areas for socializing, practicing and walking. Thus, shall encourage citizens of Riyadh to adopt a healthy lifestyle. As a result, yield about SAR 71 billion as Return on Investments by 2030, through less healthcare expenses, lower electricity consumption, higher real estate value and use of treated wastewater as a replacement for potable water for irrigation. On the other hand, this creates new investment opportunities for the private sector in many sectors and businesses including nurseries, horticultures work, afforestation, landscaping and irrigation.

As a leading global energy producer, Saudi Arabia is committed to contributing positively to the global fight against climate change. Since the launch of Vision 2030, Saudi Arabia has made tremendous progress in addressing its unique environmental challenges and definitely there is much more to be done.

Hany Labib
Director, External Operations

Dorsch Group

Moataz Khalil
Applications and Media Manager

Dorsch Gruppe – Middle East

» As BASF we want to contribute to a world that provides a viable future with enhanced quality of life for everyone. In Egypt we do so by creating chemistry for our customers and by supporting various Societal Engagement projects «

Xavier Verfaillie, Managing Director , BASF LLC

Global Players and Best Practices in ESG

Chairman of Alba's Board of Directors Shaikh Daij bin Salman bin Daij Al Khalifa inaugurates Alba's Spent Pot Lining (SPL) Treatment Plant 09 December 2021 © Alba

Aluminium Bahrain B.S.C. (Alba) Spent Pot Lining Treatment Plant

Alba

As the first Aluminium smelter in the Middle East, Alba has been a major contributor to the social, industrial and economic development of the Kingdom of Bahrain. Alba sits at the heart of a thriving Aluminium downstream sector in Bahrain, which accounts for approximately 12% of the Kingdom's GDP. As one of the biggest national companies, Alba has ensured not only the employment of Bahrain nationals (84% in 2021) but also the enhancement of their capabilities through education, training and development initiatives at every stage of their career.

Alba Spent Pot Lining (SPL) Treatment Plant is the result of the co-operative efforts between Alba and Bahrain's Supreme Council for Environment (SCE) in line with Bahrain's National Waste Management Strategy led by His Highness Shaikh Abdulla bin Hamad Al Khalifa, Personal Representative of His Majesty the King of Bahrain and President of the Supreme Council for Environment.

Spent Pot Lining (SPL) is a solid waste generated during the production of primary Aluminium. Primary Aluminium is produced via an electrolytic process, where the Aluminium and oxygen in the alumina feedstock are separated by passing a large electric current through a molten bath mixture of cryolite, alumina and aluminium fluoride (ALF3). This process occurs within carbon-lined steel pots to produce molten aluminium metal.

The lining of the pot is typically made of two layers; an interior carbon lining, named as 1st Cut, and an insulating refractory lining, named as 2nd Cut. Over time, the cell

lining wears and can form cracks that reduce its ability to hold the liquid metal in the cell. When the lining of the pot comes to the end of its life, typically after 4-7 years, it is then classified as Spent Pot Lining (SPL).

SPL contains toxic compounds including leachable fluorides and cyanides. Therefore, due to its hazards, Spent Pot Lining can cause serious environmental damage by contaminating the soil and ground water if it is not properly disposed. SPL, once treated, can be safely transported around the world for usage as a secondary resource and feedstock for other industries.

Alba's outlook towards ESG resulted in the establishment of the first-of-its-kind Spent Pot Lining (SPL) Treatment Plant in the Middle East. This Plant is one of the key outcomes of Alba's ESG Roadmap that was recently announced by Ali Al Baqali, the Chief Executive Officer of Alba on 27 April 2022. The ESG Roadmap -- comprising 6 major priorities: Decarbonisation; Green Energy & Aluminium; Circular Economy & Secondary Aluminium; Employee Welfare; Collaboration & Partnership; and Transparency, Communications and Due Diligence -- underlines the Company's strong commitment to Bahrain's objective of 'Net Zero Emissions by 2060' as well as the United Nations Sustainable Development Goals (SDGs).

Alba's SPL Treatment Plant applies a zero-waste process to transform the treated SPL waste into valuable product, which is then used in other industries such as cement. Built over 26,000 square meters with an annual capacity to treat 35,000 tonnes of SPL, this Plant was inaugurated by the Chairman of Alba's Board of Directors Shaikh Daij bin Salman bin Daij Al Khalifa in December 2021. The first shipment of 125 tonnes of Alba HiCal - a mineral additive used in the production of cement - from the SPL Treatment Plant was exported to a customer in Thailand in February 2022.

Commencing construction in December 2019, the Plant was completed as per its timeline, and despite COVID-19 challenges, successfully achieved more than 750,000 safe-working hours without Lost Time Injury. Alba also achieved a savings of US$6.5 million, corresponding to 15% benefits versus SPL Treatment Plant allotted CAPEX of US$44 million.

The SPL Treatment Plant is an embodiment of Alba's striking the right balance between its economic gains and social returns.

Alba's US$37.5 million SPL Treatment Plant Setting sets a benchmark in sustainability © Alba


Despite COVID-19 challenges, the SPL Treatment Plant Project achieved more than 750,000 Safe working-hours w/o LTI © Alba

First shipment of 125 tonnes of HiCal from Alba's SPL Treatment Plant was exported on 03 February 2022 © Alba

BASF Contributes to Egypt's Future

BASF in EGYPT

Through innovative business practices and keeping the customer at the center of everything they do, BASF in Egypt has adapted global practices of the global multi-national company to meet the small business and societal needs of the Arab world's most populous country.

Egypt is the Arab world's most populous country and the largest economy in North Africa. BASF has been active in Egypt for almost 70 years with the first delegation beginning operations in Cairo in 1952. BASF Limited Egypt was established in 2000, representing all the company's different business segments including Chemicals, Materials, Industrial Solutions, Surface Technologies, Nutrition & Care, and Agricultural Solutions. Since its establishment in Egypt, BASF has offered intelligent system solutions and has contributed to the development and production of sophisticated products across a range of industries including care chemicals, catalysts, coatings, crop protection, dispersions & pigments, intermediates, monomers, nutrition & health, performance chemicals, performance materials, petrochemicals and other operating activities.

In order to get closer to its customers, facilitate the business localization initiatives and to increase its market presence, BASF Egypt LLC was established in 2019, serving both the agriculture and the automotive sector for local trading activities.

Meeting Egypt's Growing Needs

Egypt's growing needs - including the need to house and produce food for its growing population, the booming demand

The team, consisting of volunteers, members of the organization The Rotarian Action Group for Population & Development and BASF Egypt. © BASF

Farmers learn about the importance of the proper diagnosis and effective guidance. © BASF

for consumer products, electronics and white goods, and the opportunities brought on by the development of its oil and gas industry, brings many opportunities for BASF, since its B2B solutions are the building blocks for other industries. While many of this global multi-national's customers and partners are other multinationals active in Egypt, a growing trend over the recent years is that an increasing percentage of our customers are very successful local small and medium sized businesses. For BASF, adapting global business practices to serve local needs is a business imperative for the success of its customers. The company is excited about this development since it is showing the maturity of the Egyptian economy.

Treating Customers as Partners

According to BASF's Managing Director of BASF LLC, Xavier Verfaillie, this trend has been a game changer for BASF in Egypt. "Developing partnerships with our local small businesses speaks to how we focus on supporting the local economy," he says. "As examples, in our home and personal care chemicals, as well as our performance materials businesses, we have successfully adapted our solutions to the local market by having our products available locally, having strong channel partners for the key industries, matching the market prices especially for the commodities and building a close relationship with our customers. Further support we provide for the local production of consumer goods and electronics is through continuous business development and technical trainings," he said. "We also work closely with our global Human & Nutrition division to apply the trend of boosting the immunity which became of interest after Covid outbreak by introducing vitamins to different food applications.

Focus on Localization

Localization and adaptation to local market needs are crucial for BASF's business success in Egypt as well as the success of their customers. "We already have a number of localiza-

BASF Team delivering cleaning agents to Ministry of Health who distributed it on several hospitals treating Covid-19. © BASF

tion projects in the pipeline including initiatives that focus on SMEs, and we are enhancing our local business model where we complement our localization activities with local warehousing," says Verfaillie. In addition to this, BASF Egypt has signed a Memorandum of Understanding that will enhance its position in the oil and gas sector in Egypt and the Middle East.

Improving the Livelihoods of Egypt's Farmers

BASF's agricultural solutions, which help to feed the growing population, have also been very successful and have helped Egyptian farmers to improve their livelihoods. To support the farmers in taking good care of their crops, the company established mobile agricultural clinics that visit farmers across the country. When visiting a clinic, farmers can get a free diagnosis for unhealthy and sick crops. During a clinic day, farmers bring samples of their infested plant and meet face-to-face with a BASF technical expert that provides a careful diagnosis. The company has also launched an early disease warning system for tomato farmers.

Supporting Societal Needs

"As BASF we want to contribute to a world that provides a viable future with enhanced quality of life for everyone. In Egypt we do so by creating chemistry for our customers and by supporting various Societal Engagement projects," added Verfaillie.

To prepare the future generation of scientists and engineers, BASF partnered with Injaz Egypt on the 'Achieve your Dream' project to help preparing young people for the job market. One of our other long running flagship CSR programs is their partnership with the Rotarian Action Group for Population & Development to empower women: vitamins to young mothers combined with health awareness and hygiene sessions. At the onset of the Coronavirus pandemic, BASF in Egypt supported the company's global Helping Hands projects where cleaning agents for Covid-19 hospitals in close collaboration Ministry of Health were provided, along with a number of other awareness campaigns.

"Our strong commitment to Egypt continues," says Verfaillie. "At BASF we are excited to be part of Egypt's accelerated growth and buoying economy and from its position as a gateway to Africa and the Middle East."

About BASF

At BASF, we create chemistry for a sustainable future. We combine economic success with environmental protection and social responsibility. Around 111,000 employees in the BASF Group contribute to the success of our customers in nearly all sectors and almost every country in the world. Our portfolio comprises six segments: Chemicals, Materials, Industrial Solutions, Surface Technologies, Nutrition & Care and Agricultural Solutions. BASF generated sales of €78.6 billion in 2021. BASF shares are traded on the stock exchange in Frankfurt (BAS) and as American Depositary Receipts (BASFY) in the U.S. Further information at www.basf.com.

BASF in the Middle East

BASF has been active in the Middle East for more than a century, supplying and customizing its solutions for almost every industry, mainly construction, chemicals & plastics, energy & resources, water, consumer goods, agriculture, and the feed and food industry. During this time, we have established our presence in seven countries, namely in Bahrain, Egypt, Iran, Jordan, Oman, Saudi Arabia and the United Arab Emirates, with an office in Abu Dhabi. BASF's Dubai office serves as the Middle East Regional Head Office and Service Platform. With close to 300 employees in the region, BASF works cohesively to meet the local market demands towards its corporate purpose to "create chemistry for a sustainable future".

Linda Brown
Head of Corporate Communications

BASF Middle East & Egypt


Your future
is also ours.
Meeting the challenges of today, to ensure our planet has a tomorrow, is a journey we're all on together. As BASF in the Middle East & Egypt, we are committed to the transition to renewable energy and are supporting our customers with solutions and technical expertise as they transition to green energy generation. Together, we're making that journey go faster. That's why at BASF we are optimistic about the future.
Find out more at
BASF.com
BASF
We create chemistry

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Christoph Stuhlmüller
Sales Manager

Standard Aggregatebau Evers GmbH & Co. KG

» How to escape the climate disaster and how to build a clean and affordable energy infrastructure? The solution is widespread, global deployment of clean energies, CO^2-free and low-carbon fuels, especially hydrogen and fuel cells. «

Heinz Sturm, Founder and owner of the ICEPS - CTC BONN

Renewable Energy

Christian Krewinkel – Head of Economic Section - German Embassy; Quentin Blommaert – Head H2-Diplo Riyadh - GIZ; Dieter Lamlè; Ambassador - German Embassy Riyadh; Jens Amendt - Sen. Project Manager - GIZ; Saqr Alzahrani - Advisor - GIZ © GIZ

Supporting Saudi Arabia's future role in a decarbonising world – Germany's new Hydrogen Diplomacy Office in Riyadh

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)

GIZ is a private limited liability company owned 100 % by the government of the Federal Republic of Germany. As a service provider in the field of international cooperation for sustainable development and international education work, GIZ is dedicated to shaping a future worth living around the world.

With its Vision 2030 the Kingdom of Saudi-Arabia set out on an ambitious pursuit for a diversified economy and a thriving society. Since the launch in 2016 key objectives of the Vision 2030 have been met and many results are already visible today. Among the more long-term and deeply transformative objectives ranges carbon neutrality by 2060. For which Saudi-Arabia is drastically accelerating the deployment of renewable energies (RE). Up to 57 gigawatts of RE

capacity are meant to be installed by 2030. With electricity generation costs of renewable energies as low as one US dollar cent per kilowatt-hour Saudi Arabia has a definite trump card to play. Consequently, the Kingdom is also planning to become the number one exporter of CO2-neutral hydrogen by 2035, catering to the growing demand for hydrogen in Europe and other parts of the world. In that regard, Germany has geared up to support its long-standing Saudi partner with all the necessary technological and knowledge sharing and cooperation.

Until recently, Saudi Arabia solely focussed on monetizing its underground fossil resources. More than half of Saudi Arabia's gross domestic product relies on the oil sector. Its key exports are still made of oil and derivative products. Gas itself is used for domestic energy production and water desalination. Gradually, through thorough planning and politically set targets like the ones of the Vision 2030, solar and wind power will be more and more harvested parallel to their fossil counterparts. This complementarity is sought for to use existing resources to finance future infrastructures. The global energy transition and the hydrogen factor add to the country's own efforts to gradually diminish its reliance on oil and diversify its economy by tapping into its renewable energy resources. For the most populous country in the Gulf region, this shift is as much about the creation of future oriented jobs for its young population, as it is for diversification of its industries.

Taking the probability that today's global energy landscape might see an increase in energy providers, a key player like Saudi Arabia is expected to maintain its current position by addressing new trade relations and deepening existing ones especially in Asia and Europe. Therefore, both conventional and renewable energy resources are brought to the fore for exploitation. In hydrogen terms this means making use of the large gas deposits for blue and of excellent solar potential, with the support of wind, for green hydrogen production.

There is an important change though popping up with the expected global ramp up in hydrogen production and use: the dominating trade ties through which fossil fuels' exporting countries provided feedstocks with which third partners in other parts of the world realized a major part of the value-added creation are not to remain untouched.

Quentin Blommaert – Head H2-Diplo Riyadh - GIZ; Dr. Jamal Hasanain – Doctor; Dr. Elham Hassanain – University Professor; Dr. Hoda Alhelaissi – Shura Council Member; Dieter Lamlè; Ambassador - German Embassy Riyadh; Dr. Ulrike Lamlé; Saqr Alzahrani - Advisor - GIZ © GIZ

Faris Alsulayman – Research Fellow - KFCRIS; Dr. Sebastian Sons – Researcher - CARPO; Dr. Ghazi Binzagr – Shura Council Member; Quentin Blommaert – Head H2-Diplo Riyadh - GIZ; Christian Krewinkel – Head of Economic Section - German Embassy © GIZ

Carsten Schmitz-Hoffmann, Director General- GIZ International Service H.E. Essam Ibrahim Baitalmal, Ambassador of the Kingdom of Saudi Arabia Germany Jens Amendt, Sen. Project Manager - GIZ © GIZ

As stated earlier, economic diversification is imperatively needed in the Kingdom, as it is in many oil and gas states. Central is to diminish the dependency on fossil-based revenues, in a world that aspires towards carbon-neutrality as soon as it goes. To compensate for the lack in income, new industrial sectors are expected to emerge. As such, feedstocks, in the form of hydrogen or its derivative products, will be sold for exports but also are intended to be used domestically to enhance value creation in the Kingdom.

In other words, domestic resources consumption is about to continue growing, from an electricity, gas and at a later stage from a hydrogen perspective. Saudi Arabia knows that export-goods presenting a higher value-added, such as green steel or cement, might be gradually produced domestically. Thus, increasing the country's competitiveness in a decarbonizing world.

Based on these strategic premises and to engage in a dialogue on Saudi Arabia's future role in a decarbonising world, the German Foreign Office, with the support of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), has established the Hydrogen Diplomacy Office in Riyadh in February this year. This initiative is meant to complement the German-Saudi Energy Partnership of the German Federal Ministry for Economic Affairs and Climate Action and the Saudi Ministry of Energy, which already focusses on strengthening technological and business cooperation on green hydrogen.

In addition to this on-going exchange pertaining to hydrogen technologies for production, transport and use, the Hydrogen Diplomacy Office in Riyadh adds another layer of analysis, namely: hydrogen's upcoming rise as traded commodity along with oil, gas or electricity, and its potential to redefine Saudi Arabia's role and trade relations in a decarbonising world. At the same time, highlighting the potential of hydrogen value chain for the Kingdom's efforts in accomplishing Vision 2030. To shed light on these questions, the Hydrogen Diplomacy Office and GIZ, together with the German Embassy in Riyadh, will provide a platform for dialogue between Saudi and German institutions as well as European stakeholders. In this regard, the Hydrogen Diplomacy Office will conduct dialogue events, roundtables as well as studies and provide advice to Saudi counterparts.

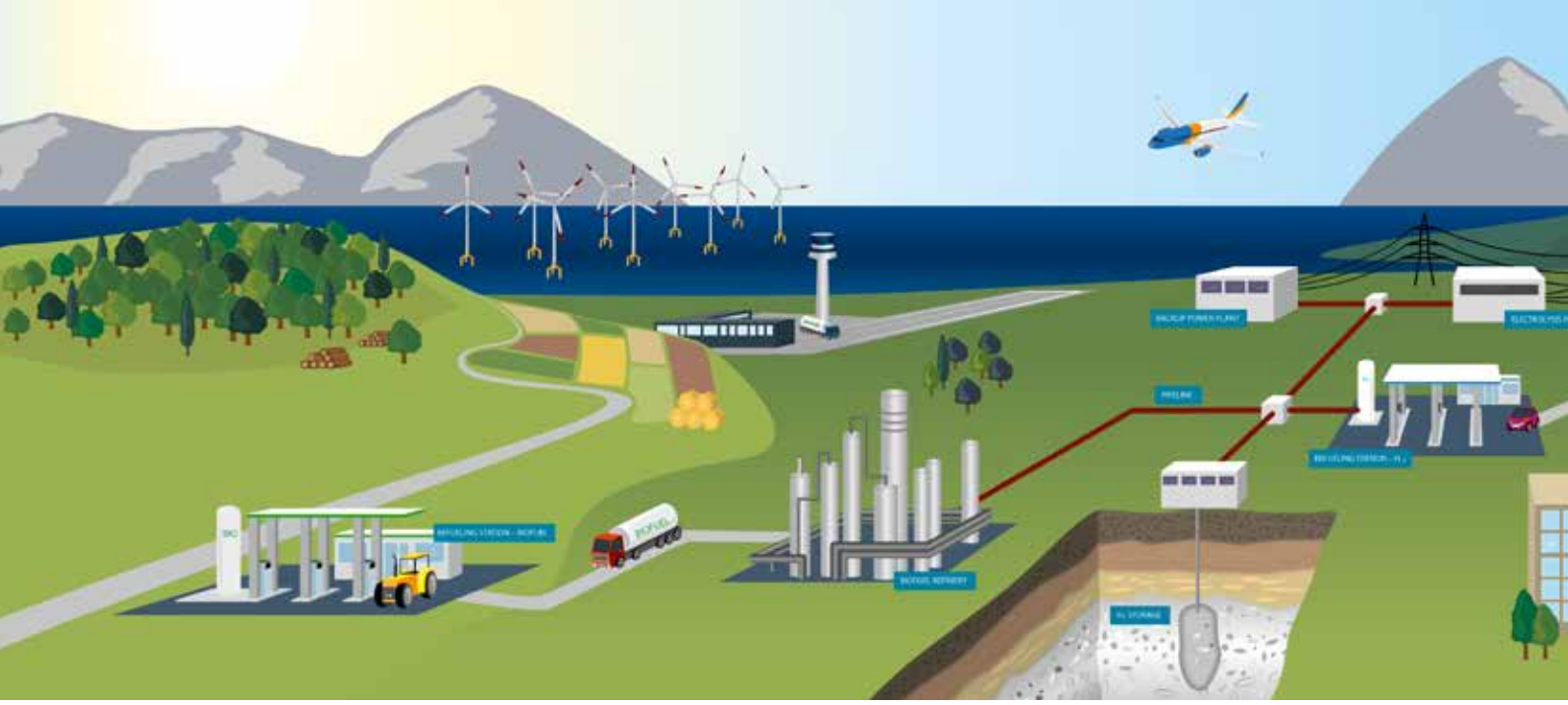
The Hydrogen Diplomacy Office in Riyadh forms part of the German Foreign Office's Global Hydrogen Diplomacy Programme, H2-Diplo. In Saudi Arabia, this initiative falls in line with many activities that GIZ has been carried out in the country since 1980. In addition to projects from the German government, GIZ International Services has registered a branch in Riyadh in 2015 to execute projects commissioned by the Government of the Kingdom of Saudi Arabia and other national clients. All these projects underline the strong future-oriented path of the country.

Regarding climate neutrality the path may still seem very long. Yet, key decisions have been taken with the Vision 2030 and key steps are continuously being made in the right direction.

For a key partner country like Germany, it is of paramount importance to stand firm as a knowledge provider on the Kingdom's side on its sustainability journey. The Hydrogen Diplomacy Office Riyadh is meant to complement German commitment in Saudi Arabia by adding, a macroeconomic and geopolitical dimension to the hydrogen debate.

Quentin Blommaert
Head of Hydrogen Diplomacy Office Riyadh

GIZ



Hydrogen Economy for Arab Countries

Urban power station of the future for electric mobility with hydrogen gas, fuel cells and batteries

ICEPS - CTC BONN

The Bonn Climate Project combines renewable energy and sectoral coupling projects for developing countries, especially in rural areas. German solar and renewable energy off grid technologies are based on low and zero carbon gases; bio hydrogen gas and bio methane gas from local and natural resources in combination with gas motors and gas fuel cells for universal use in households, for mobility and for industrial use as a feedstock

Renewable energies throughout the world are off grid using four elements: fire, water, air and earth.

Green electric power and green hydrogen can be manufactured suitably and everywhere and can be used in combination for power, heat, all types of transport and mobility; residential use and industry (as a raw material) and even for drinking water production.

Decentralized, as well as in an existing supply network such as gas, and electricity and heat, by feeding green hydrogen and/or green electricity into the different grids. Also by additional heat which is produced as a by-product in fuel cells during electricity production, and which can be fed into a heating grid.

The use of valuable water which is produced instantly and is an addition in fuel cells by the chemical reaction of hydrogen and oxygen is a valuable asset in many dry regions of the world: green hydrogen and green electricity from the four elements.

Renewable Hydrogen Production, Storage, Transport and Utilization for Transport, Household and Industry. Urban Power Station © Forschungszentrum Jülich GmbH

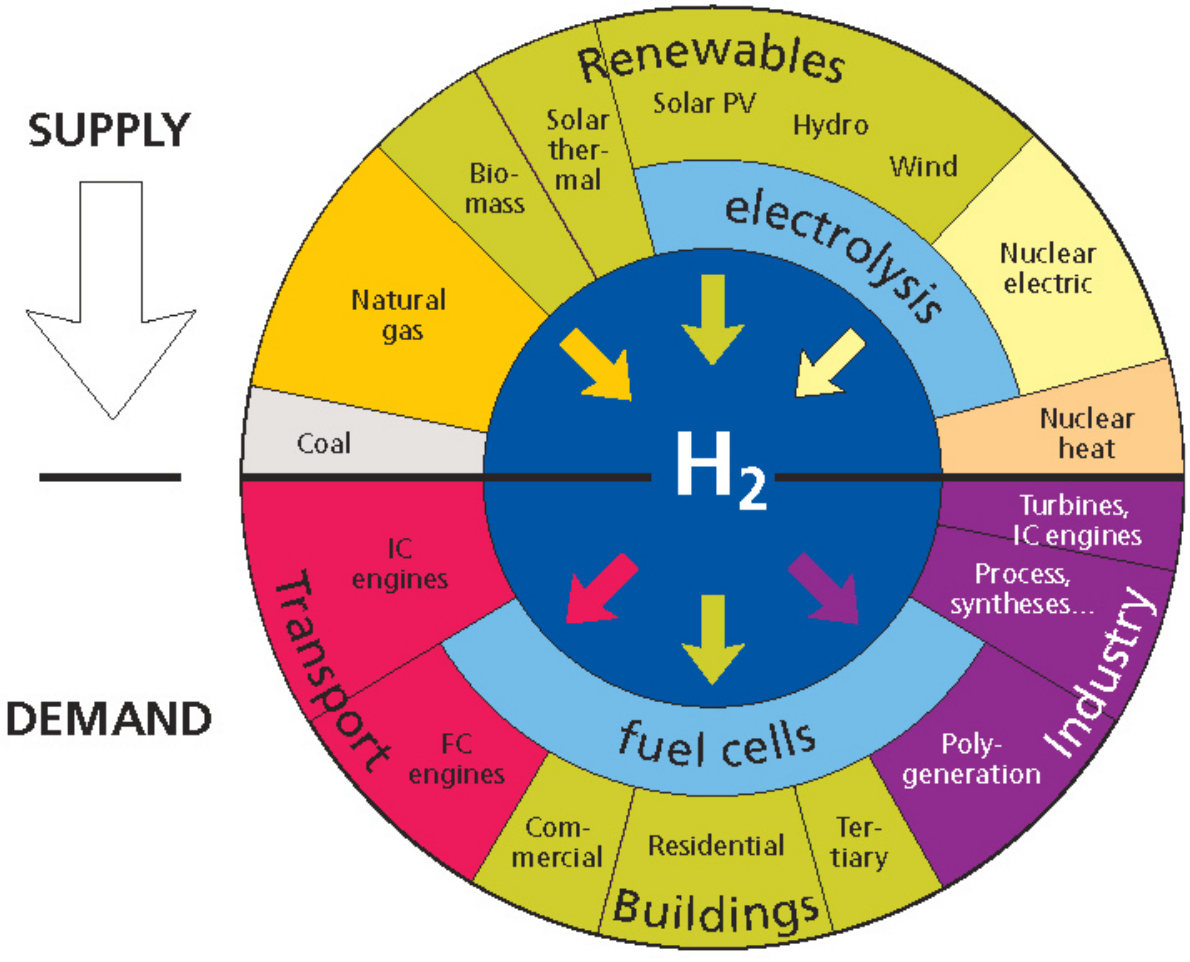
The urban power station of the future: coupling of all sectors to one system - production, transportation, storage and utilization; off grid and all over the world.

Climate protection and urban transportation

The future lies in hydrogen, fuel cells and batteries for electric mobility on the road, on rails, in the air, and on the water.

Climate change comes more and more swift, stronger, and threatening. In order to meet the climate treaty we need new urban transportation solutions, win form of electric vehicles.

Electric engines in any vehicle are powered by electricity from batteries or fuel cells, produced by conversion of clean and environmental-friendly hydrogen (and oxygen from the air) in fuel cells, directly on board of a vehicle. After approxi-



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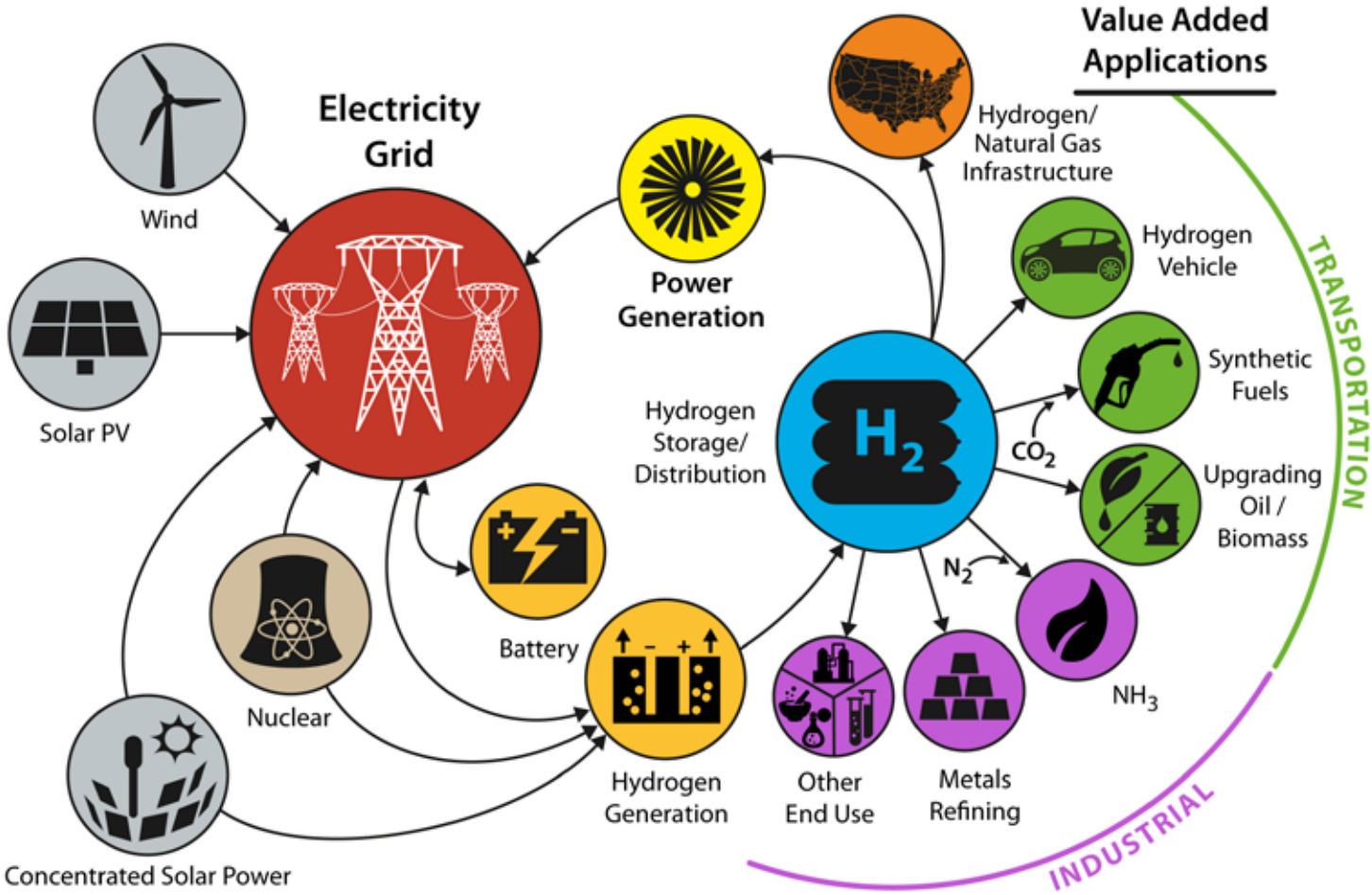


mately 500km and more, the hydrogen tank is filled up at a hydrogen filling station, and the journey can be continued. These are considerable advantages over the charging time of battery-electric vehicles (cars, lorries, buses, trains, boats, ships, or aircrafts).

Even batteries can be charged at home or at charging stations in the city within hours. Both electric transportation solutions have their markets and will help to avoid air pollution by $C0^2$.

In the years to come, we swiftly need to set-up the course for the introduction and market launch of different electric vehicles, and as the pre-requisite, the infrastructure in form of hydrogen filling stations for clean and affordable hydrogen gas, or electric charger stations, all over Arab countries.

Made in Germany, for Mena and GCC

In the past few months, the first f-cell cars where, presented to the international press in different countries, as well as hydrogen f-cell railway trains and likewise, aircrafts, while on German roads, hydrogen f-cell cars and city buses are already evident. Now, we can also inform about the Hydra, the world's first hydrogen fuel cell-electric water taxi, far ahead of its time, which also can immediately be manufac-

tured in series, and then promptly be an excellent contribution for active climate and water protection. Indeed, the boat, a passenger ferry, is a master piece of innovation Made in Germany

Climate Action, how? What can be done? Comprehensive information needed!

How to escape the climate disaster and how to build a clean and affordable energy infrastructure? The solution is widespread, global deployment of clean energies, CO^2-free and low-carbon fuels, especially hydrogen and fuel cells.

Today the world is more active in climate protection than ever before. Air, water and soil, must be protected, any resource consumption should significantly be reduced, and waste of all kinds should be reutilized. People need clean, affordable energy worldwide, even in remote rural areas, and particularly in the deserts and steppes of the Arabic countries.

The citizens of any country need to know about solutions, and our actions and decisions to copy and use.

Some principals

1. Water is life, energy and a fuel

2. Water is composed of hydrogen and oxygen

3. Water changes its state into hydrogen and oxygen and then back to water

4. Nothing is lost in the world. Everything only changes its status and can be used over and over again: from the solid to the liquid state to the gaseous state This is the hydrologic and hydrogen circle.

5. Our energy is utilized in the form of oil, gas, coal, or wood; all are hydro-carbon elements and compounds.

6. Take away the carbon and use only the hydrogen as $C0^2$-free energy for universal use, as shown just before

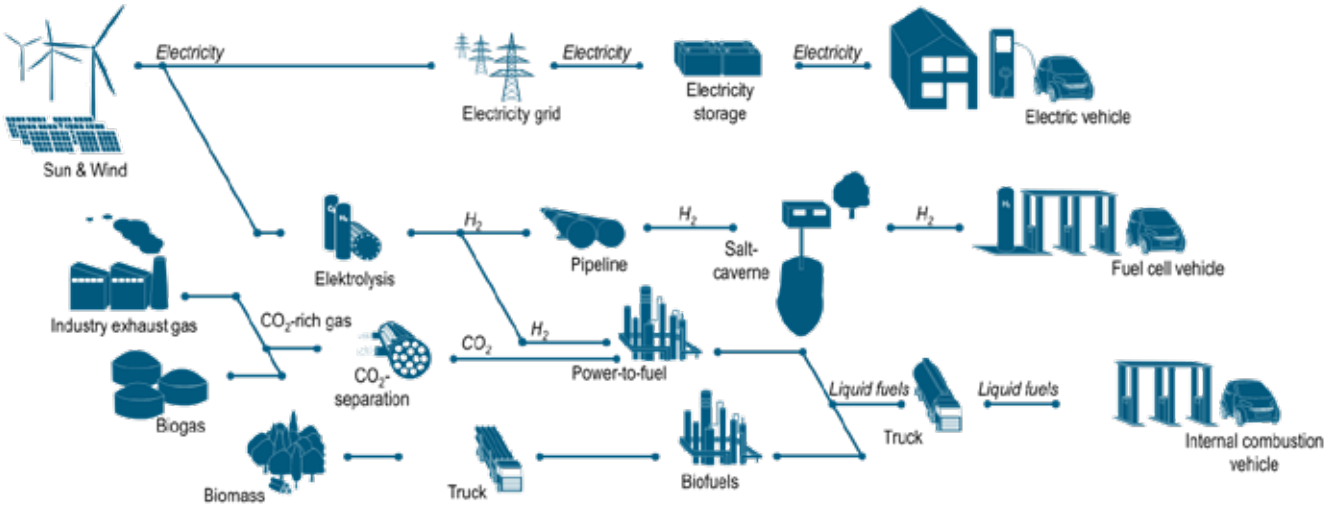
UAE and Arabic countries, promoters of climate protection

Urban water and waste management - Urban energy & transport - Urban planning and building - Clean air solutions all belongs together and is an active climate protection, a perfect overall project for sectoral coupling with hydrogen gas as a basic clean energy.

If the above-mentioned individual sectors work together, plan at an early stage and build on the basis of hydrogen and fuel cells, in the future, villages, cities, new living habits and ways of life can be created. The architecture of buildings will change significantly and construction will be simplified, many decentralized small fuel cells in buildings will enable simple electricity and heat production everywhere and decentral. Buildings will no longer depend on large central power plants for an entire building and wiring in the building.

New transport concepts based on electric vehicles of all kinds make life easier for us and are good for our health.

Hydra Boat. Electric mobility on the water by hydrogengas/ fuel cells. A Project of ICEPS CTC BONN Technology Foundation



Clean air and no noise and stress from a car's internal combustion engine or diesel generators, which generate electricity in addition to many buildings. Also no vibrations or noises are generated by the different uses of the hydrogen and the fuel cell in the transport sector as well as in the building sector.

Water and Waste Management

The production of hydrogen via gasification technologies, by means of the steam refurbishment of all biomass waste, will completely solve the major problem of waste disposal. All types of biological household waste, (which contain the Elements hydrogen, oxygen, Nitrogen, Carbon and Minerals,) Industrial waste and other waste are completely gassed. In this case, the synthesis gas, hydrogen gas, CO2 and all minerals such as phosphorus, potassium, magnesium, calcium and metal parts in the garbage such as PB, Ferrum and others, are reused or deposited in the form of ashes. All other elements are valuable substances and come back into the life cycle, including valuable water from the biomass which is gasified.

Hydrogen supplies us with clean and affordable energy.

Heinz J. Sturm
Civil Engineer, Dipl. Hydrogen & Fuel Cell Technician

Founder and owner of the ICEPS - CTC BONN

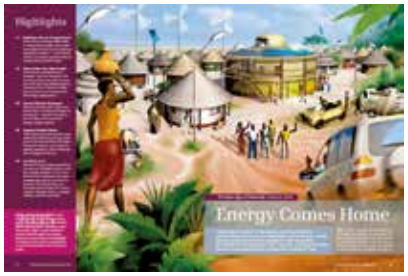
BONN CLIMATE PROJECT

Energy is the source for life, food, business, development, health, information and transportation. The constantly raising energy prices are threating billions of people around the world and prevent growth and stability. Unrest and poverty rule.

In order to provide solutions for emerging countries, who are in urgent need for clean and affordable energy, decentralized and holistic gas-electric energy systems based on renewable and sustainable energies need to be available.

The SCOPE OF WORK OF THE BONN CLIMATE PROJECT

Providing renewable, sustainable innovations & technology transfer based on clean natural and hydrogen gases, Gasmotors and Fuel Cell Systems, Natural- and Hydrogen Gas Technologies & Energies of the Future.



Electric Mobility Concepts for Urban and Metropolitan Solutions

International Technology Transfer

Natural & Hydrogen Gas Waste to Gas

Solar Power to Gas

LNG-CNG-LH2-H2-GTL-CTL-BTL

Dual Vocational Training Study and Capacity Building

Development of dezentralized, holistic clean and affordable Energy Systems

BONN CLIMATE PROJECT – FOR A HEALTHY FUTURE

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United Nations Framework Convention on Climate Change

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» The North African and Arab region is considered one of the cradles of complex logistics processes and gathering points of various logistics services. «

Houssam Ammar, Managing Director, Roland Logistik GmbH

Transport and Logistic

Roland: International Project Logistics

Air freight charter from Germany to Libya © Roland Logistik GmbH

The North African and Arab region is considered one of the cradles of complex logistics processes and gathering points of various logistics services. As a globally operating project forwarding company with a focus on North Africa and the Arab world, the quality of our service and customer satisfaction come first. Tailor-made logistics processes for each individual project. Professional transport through trained personnel, the availability of equipment on site, close contacts with the port authorities and governmental offices and the familiarity with the different cultures are the tools of our daily work. With our headquarters in Delmenhorst near Bremen, our own office in Libya, representative offices in Egypt, Syria, Iraq, IRAN, and a network of specialists in the Arab, African and South American world, we can offer complete logistics packages of the highest quality until the final project site.

Our Services

- Project Logistics
  worldwide professional expertise - one contact person
- Special Transports
  large and heavy, but not too big for us
- Trucking Services
  truck transport, from XS to XXL
- Ocean Freight
  shortsea, oversea, crosstrade, door-to-door
- Airfreight
  when it has to be done with lightning speed

Oversize transport from Portugal to Libya, finale project site

© Roland Logistik GmbH

Oversize transport from Germany to Algeria

» Don't find fault, find a remedy «

- Henry Ford

Oversize transport from Italy to Iraq, finale project site © Roland Logistik GmbH

In target-oriented logistics, professional communication, along with an understanding of foreign cultures, is the key to a flawless transport chain. We speak the national languages of the countries of destination, including Arabic, Persian, Kurdish, Turkish, French, and English. Know-how and know-who is the yin and yang of logistics. Both factors determine the level of the service quality. Convince yourself and ask us about your transport or logistic needs.

roland.de

Our Core Competence

- Northern Africa
  with own branch in Tripoli, Libya
- Arabic World
  Linguistically at home and coordinator between cultures
- IRAN / IRAQ
  complicated – but not for us
- Multilingual Employees
  international work experience on 4 continents
- Top Quality Standards
  average is not good enough
- Short Communications Paths
  very comfortable
- Competitive Pricing
  and service, service, service...

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Houssam Ammar
Managing Director

Roland Logistik GmbH

» The widespread introduction of information and communication technology and smart applications in these urban regions will be one of the biggest challenges of the future. «

Yasser Nagi, Group Director Middle East & North Africa and Managing Director Wilo Middle East & Egypt

Special Topics

360-degree service to ensure reliable conveyor operations

REMA TIP TOP integrates project & maintenance for better results

In mining, food and any other raw materials processing industry, continuous operations are essential to deliver sustainable performance and avoid financial losses. To ensure reliable operations, the entire lifecycle of transportation systems, from design to continued operation, maintenance and services must be planned and implemented in an integrated manner and ideally delivered by an experienced and quality-assured service provider. REMA TIP TOP supports its customers with proven experience, know-how and a worldwide service network to successfully manage the entire lifecycle of their conveyor systems.

Mario Delmaestro, R&D and Service Manager REMA TIP TOP Middle East, explains how REMA TIP TOP's 360-degree service to not only helps its clients to increase the reliability of transport equipment but also to achieve the expected results of their projects, such as higher operational capacity, better maintainability, greater physical availability, etc.

Mr. Delmaestro, what are the challenges when planning a conveyor project?

From many years of experience and countless projects, we know that in many cases the reliability and operation of facilities are not considered sufficiently or at all in the development phase, which can lead to problems later in operation. Regardless of whether a new conveyor system is being built (green field) or an existing system is being modified (brown field), project development and maintenance should be planned and implemented in an integrated way throughout the entire life cycle. If the two areas diverge, for example because the project does not take subsequent maintenance into account, problems can arise and compromise smooth operations. That's why at REMA TIP TOP we take a more holistic approach, analyzing all the factors that influence not only the technical development phase, but also the years in which the new equipment will be in operation.

What solutions and services does REMA TIP TOP offer its customers?

REMA TIP TOP offers services covering all phases, starting with the identification and collection of asset data, establishing a maintenance and failure history, as well as risk and technical analysis, including development calculations, material specifications and their applications, up to training and operational qualification, in order to achieve the results expected by the customer. In this way, REMA TIP TOP offers a 360-degree service, ranging from problem analysis and customer requirement to continuous monitoring, using an extensive portfolio of maintenance and monitoring services providing us with reliable data on the equipment and measures to guarantee the best results.

All these services are provided by professionals who have many years of experience in these fields and have completed numerous successful projects, guaranteeing the best and most efficient service for our clients. Moreover, at REMA TIP TOP we believe that the best way to make a project successful is to involve the customer at all stages. Through the exchange of knowledge and experience and in-depth discussions, customer involvement becomes the cornerstone for achieving superior results. Mutual partnership with its customers coupled with extensive know-how and experience distinguishes REMA TIP TOP from other suppliers.

What added value does REMA TIP TOP offer its customers?

First of all, it should be mentioned that REMA TIP TOP is a partner that not only provides the engineering, but also has several decades of experience to ensure the best transition and delivery of projects in terms of maintenance, which guarantees a complete delivery from a maintenance and operational point of view. Secondly, with its 360-degree service concept, REMA TIP TOP is able to provide all the necessary services in terms of design and maintenance of the highest quality and, last but not least, we offer the possibility of continuous monitoring of the equipment, using all the technical data provided by our monitoring systems for an effective strategy to monitor and control the equipment during its operation. The bottom line is that our 360-degree service is much more than the sum of its parts.

© REMA TIP TOP ME

© REMA TIP TOP ME

Mario Delmaestro
R&D and Service Manager
REMA TIP TOP Middle East

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Outside view of the Al Thumama Stadium. The architecture is inspired by the traditional taqiyah hat which is worn by men and boys across the Middle East © Wilo

Identifying the right sustainable solutions: Wilo supplied pumps and systems to the FIFA World Cup Qatar 2022 stadiums

Wilo

All over the world, we see cities merging to urban regions and the widespread introduction of information and communication technology and smart applications in these areas will be one of the biggest challenges of the future. This will give rise to Smart Urban Areas where urban infrastructures and all areas of life are digitally connected in a smart way. Sport arenas, as part of the recreational zone within Smart Urban Areas, need smart, intelligent and connected solutions for all applications.

Challenge

The Al Thumama and Al Lusail stadiums in Qatar are two of the most magnificent structures that exemplify the elegance and beauty of Qatar. While the 80,000-seat Al Lusail stadium represents Qatar's ambition and passion for sharing Arab culture with the world, the Al Thumama stadium is dynamic, empowering, and truly imaginative, designed to celebrate Arabic culture and traditions, thereby hosting the majority of the FIFA World Cup Qatar 2022 tournament matches.

Wilo, a premium pump and system manufacturer with a long history dating back to 1872, was approached to assist with reliable and sustainable rainwater extraction and air conditioning systems at Al Lusail stadium, as well as booster sets for water supply and pitch irrigation at Al Thumama stadium, in 2018 and 2019 respectively, all in keeping with the company's sustainability standards. Both venues had set goals of adopting sustainable construction practices, and even targeted a 4-star certification from the Global Sustainability Assessment System for both design and construction. In addition, Wilo was tasked with facilitating these requirements under tight deadlines due to the inauguration timelines.

Solution

Wilo began its execution processes in December 2018 for Al Lusail Stadium and in September 2019 for Al Thumama Stadium. The company was able to deliver its offerings to both venues through its strategic partnerships and local distributors, which included Marine Trading and FJ Trading for Al Lusail and Al Thumama stadiums, respectively.

Wilo provided Al Lusail stadium with the company's state-of-the-art FA pumps for storm water drainage (Water Management). Conservation of water was given top priority, and recycled water was used to irrigate plants around the stadium, while leakage detection systems saved over 40 per cent of freshwater. Similarly, Wilo's Atmos Giga for HVAC (Building Services Commercial) facilitated special roof material that allowed enough light in for pitch growth while also providing shade to help the stadium's air conditioning system. The city further solidified the initiative by installing smart meters that will conserve energy, and by collecting organic waste for biomass fuel. Furthermore, green spaces were also leveraged to actively improve the air quality around the venue. Likewise, Al Thumama stadium was equipped with Wilo's advanced pitch irrigation system, consisting of the Wilo Helix-V pumps. The Helix-V pumps, with their maintenance-friendly design, robust coupling guard, and corrosion-resistant impellers, guarantee improved efficiency, reliability, and are degassing-optimised. Wilo Helix-V optimised pump housing further enhances the overall water supply and flow, allowing for better water management in the stadium.

Both stadiums were equipped with Wilo's efficient and sustainable pumping solutions, which allowed the venues to be on track to attain a 4-star certification from the Global Sustainability Assessment System Trust (GSAS) for design and construction – a performance-based sustainable building rating system that is designed to help create a built environment that is not only sustainable, but also facilitates the preservation of values, traditions, and identities of the region. Moreover, Wilo's leakage detection systems and recycled water irrigation helped save over 40 per cent of freshwater, in comparison to conventional stadiums around the region.

Inside view of the Al Thumama Stadium. Wilo supplied solutions for water supply as well as pressure boosting © Wilo

Outside view of the Lusail Iconic Stadium in Qatar. The stadium will host the final game of the 2022 FIFA World Cup © Wilo

Results

Wilo's prompt actions and smart solutions resulted in the successful completion of systems in both venues. The Al Lusail Stadium was completed in a time period of 20 weeks and will be inaugurated prior to the commencement of the FIFA World Cup Qatar 2022 tournament, while the Al Thumama Stadium was completed in a time period of 22 weeks and inaugurated on October 22, 2021.

Located 15km north of central Doha, Lusail is a pioneer among cities. This sustainability-focused stadium, along with its tram system and abundant green spaces, emphasizes the needs of people and the environment at every stage of its construction. In this way, 200,000 people will be able to enjoy the legacy of this spectacular stadium while enjoying the benefits of the environment.

Al Lusail Stadium was completed using sustainable construction methods and recycled construction waste wherever possible. Materials were chosen with care to meet environmental goals, taking into consideration both manufacturing methods and future performance. Construction processes were also monitored stringently to minimise pollution and contamination. The venue is set to become the centrepiece of Lusail, making it a state-of-the-art metropolis, created to meet the needs of its residents. Once the FIFA World Cup Qatar 2022 has ended, the stadium will be transformed into a community space with schools, shops, cafes, and sporting facilities. This multi-purpose community hub will allow people access to everything they need under one roof.

Likewise, the Al Thumama Stadium, located 12 km south of Doha's enchanting skyline, was successfully built to reflect Arab culture and traditions. A major highlight of the stadium is its role as a community hub, its green and sustainable credentials, and its easy access via the Metro. The venue, which hosted the Amir Cup Final between Al Sadd and Al Rayyan, accommodates lush green surroundings and other areas for play and relaxation, in an effort to not only beautify the venue, but to also enhance the lives and futures of the local communities. Moreover, the precinct features a 50,000 m of park area, with native vegetation and almost 400 trees covering 84 per cent of the landscape.

Yasser Nagi, Group Director, Sales Area MENA at Wilo, stated: "At Wilo, our innovative solutions, smart products, and services allow for improved building services & water management in an intelligent, efficient, and sustainable manner. We strive to make significant contributions to climate protection with our sustainability strategy, in conjunction with our partners, while systematically moving forward with our digital transformation. Wilo is deeply committed to sustainability, which is highly aligned with our core Sustainable Development Goals (SDGs). We

envision supplying more people with clean water, making a substantial contribution to expanding initiatives in the area of water and sanitation between now and 2030. Wilo already takes pride in holding the position of being one of the digital pioneers in the industry, with our futuristic products, solutions, processes, and business models."

"Furthermore, our teams at Wilo are constantly striving to make a positive impact on the industry, with their highly efficient and sustainable products and solutions. The company views energy efficiency as a top priority and develops cutting-edge solutions to drive effective water management. Pumps and pump systems are an elementary component of critical facilities, and we understand the significance of an efficient water infrastructure – from raw water intake and treatment to sewage removal and treatment. Our sustainable water management not only focuses on the production and provision of drinking water, but also on the disposal and treatment of wastewater. Our offerings are designed to effectively manage the valuable resource of water and avoid increased contamination," he added.

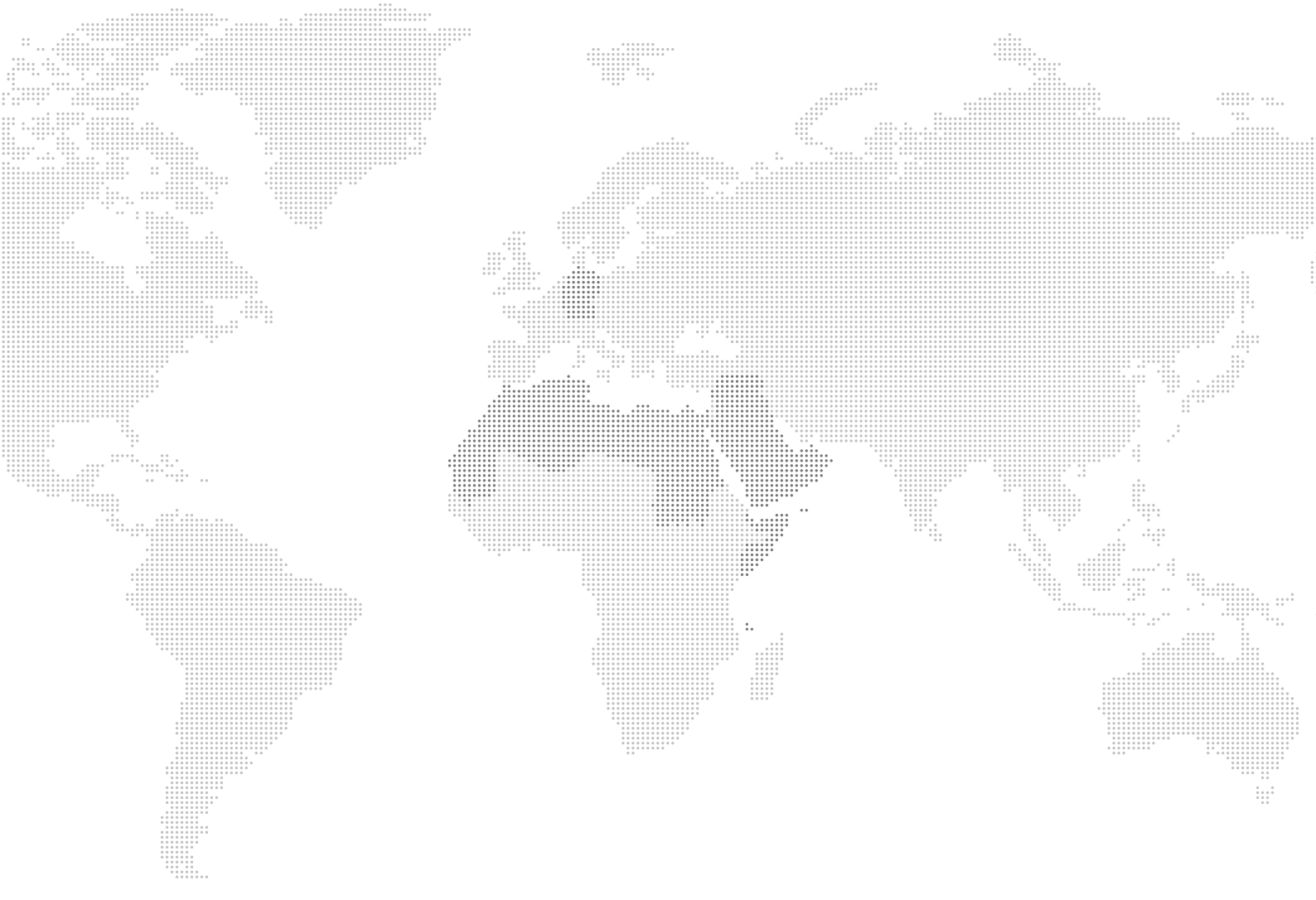
Wilo's cutting-edge solutions were instrumental in the stadiums' successful completion, reaffirming the company's position as a trusted solutions provider in the industry. The positive results for energy and water consumption have further strengthened Wilo's offerings as products of value and reliability. The company offers a wide variety of intelligent pumps and systems to improve the quality of life of its customers. Wilo's energy-efficient solutions are not only ideal for residential, commercial, and public developments, but also for other water management applications.

Yasser Nagi
Group Director Middle East & North Africa and Managing Director Wilo Middle East & Egypt

Wilo

Ghorfa

BUILDING BRIDGES BETWEEN GERMANY AND THE ARAB WORLD



Ghorfa Arab-German Chamber of Commerce and Industry

Building Bridges between Germany and the Arab World

Arab-German business relations are historically deeply rooted and full of opportunities and have endured many obstacles over the time as they are build on a strong foundation that can withstand adverse circumstances and shape a robust and prosperous future. This is impressively illustrated by the balance of trade between Germany and the Arab world, which was more than $41 billion in 2021 despite the Covid-19 pandemic. Now that the global economy is slowly emerging from the pandemic, not only can existing collaborations be intensified and expanded, but rather new partnerships can be forged in unprecedented sectors, as crises are also always a catalyst for innovation. The Ghorfa Arab-German Chamber of Commerce and Industry has a key role to play here, serving as a bridge between all 22 Arab countries and Germany, and constantly working to create and strengthen fruitful and long-term business relations between Germany and the Arab world in the service of its members and the countries it represents.

About us

The Ghorfa Arab-German Chamber of Commerce and Industry is the competence centre for business relations between Germany and the Arab world. It was founded in 1976 and has been located in Berlin since August 1, 2000. For over 40 years, the Chamber has been committed to promoting business relations between Arab countries and Germany and serves as the primary centre of expertise within the Arab-German business community.

Our mission

The Ghorfa pursues non-profit goals to enhance and strengthen business relations between Germany and the Arab world in the fields of trade, industry, finance and investment. Strategic partnerships based on mutual benefit and understanding, create new business opportunities that facilitate economic benefits for both sides. The Ghorfa, therefore, mainly focuses on networking, consulting and on providing information about relevant economic and industrial developments.

Our network

Based on its invaluable heritage and its ambitious commitment, the Chamber has a powerful network consisting of both institutional and entrepreneurial decision makers from Arab countries and from Germany. Under the umbrella of the Arab League and the Union of Arab Chambers, the Chamber operates and acts as the representative of all Arab Chambers of Commerce and Industry in Germany. The Ghorfa works closely with the Arab Chambers of Commerce and Industry, related governmental bodies and relevant business associations in the Arab states, as well as with Arab embassies in Germany. It is part of the worldwide organisation of Joint Arab-Foreign Chambers of Commerce and Industry. The Ghorfa cooperates with German governmental bodies on federal and regional levels and with German industrial associations. The close connections and effective collaborations with decision-makers and policy shapers enable the Chamber to deliver a broad portfolio of high-quality services to meet its members' interests.

Activities, Conferences and Events

The Arab-German Business Forum has become the most important platform for the initiation and promotion of promising business opportunities between German and Arab business partners. More than 600 high-ranking business leaders and political decision-makers from the Arab world, Germany and Europe participate in this annual conference. The Ghorfa has been organising this distinguished event since 1998 in cooperation with the Union of Arab Chambers and the Association of German Chambers of Commerce and Industry under the auspices of the Federal Ministry for Economic Affairs and Energy.

Moreover, the Ghorfa hosts conferences on different industry sectors such as health, energy, education, and sports to bring together Arab and German professionals from respective branches. These events provide a professional setting for analysing and discussing possibilities for business expansion and serve as a place to debate future trends in the Arab world and Germany. The Ghorfa also runs numerous country-specific events, ad-hoc conferences on arising topics, as well as B2B meetings and working groups.

Networking

- Quick access to economic and political decision-makers
- Connecting with matching business partners
- Forwarding business enquiries to relevant recipients from our database of 15,000 contacts
- Participating in high-ranking events, conferences and further networking platforms (e. g. Arab-German Business, Energy, Health, Education and Vocational Training Forum)
- B2B meetings with high-ranking business people through events, delegation visits and upon special request
- Exclusive member events such as roundtables and working groups
- Professional all-round assistance for trade fair participation

Consulting

- General and business-related intercultural consulting
- Specifying possible business cooperation and evaluation of potential business partners
- Country and branch-specific analysis

- Comprehensive and detailed market information
- Competent market entry assistance
- Mediation and arbitration in cases of business disputes
- Advice and guidance through the multitude of offers and competing products in the German and Arab market
- Raising the presence and visibility of Ghorfa member companies in the competitive market
- Visa and commercial documents support

Information

- Regular reports with relevant information about economic and business trends
- Information on the latest economic developments, promising markets and sectors; legal and political background
- Quarterly bilingual business magazine SOUQ, providing an overview on cooperation possibilities and activities within the Arab-German business community
- Complimentary copy of our Business Guides, Sector Specific Books (e. g. health, education, energy or infrastructure) as well as the Arab-German Business Directory

We welcome you to become part of the high-level network that we provide for professionals and business leaders from the Arab world and Germany. Join us and share our vision of prospering Arab-German business relations. For further information concerning membership in our chamber please contact us:

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» It is the companies involved that make each Yearbook special by illustrating how different and diverse projects in the same sectors can be and where the trends of the future are going. «

Abdulaziz Al-Mikhlafi, Secretary General , Ghorfa Arab-German Chamber of Commerce and Industry

CONTRIBUTING COMPANIES AND INSTITUTIONS

Aluminium Bahrain B.S.C.

At plus-1.561 million metric tonnes per annum (2021), Alba is the world's largest Aluminium smelter ex-China with more than 50 years of excellence in Operations, Safety, Environment and Socio-Economic Development. Alba produces high-quality Aluminium products in the form of Standard and Value-Added Products (VAP) s, which are exported to more than 240 global customers through its sales offices in Europe (Zurich), Asia (Hong Kong & Singapore) and subsidiary office in the U.S. Alba is dual listed on Bahrain Bourse and London Stock Exchange and its shareholders are Bahrain Mumtalakat Holding Company B.S.C. © (69.38%), SABIC Industrial Investments Company (SIIC) (20.62%) and General Public (10%). Alba holds globally-recognised certifications such as ISO 9001, ISO 14001, ISO 27001, ISO 45001, IATF 16949:2016, ISO 22301:2012 Business Continuity Management System (BCMS) and ASI Performance Standard Certification and Ecovadis Certification.

Projects: Aluminium Bahrain B.S.C. (Alba) Spent Pot Lining Treatment Plant

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AS+P Albert Speer + Partner GmbH

AS+P is an internationally operating design practice with more than 5 decades of experience and a proven track record in the MENA region which started with the Diplomatic Quarter in Riyadh in 1977. We consciously opt for a comprehensive, sustainable approach: Our interdisciplinary team of 200 architects and urban planners, landscape architects and transport engineers develops and plans projects of all sizes from regional planning through to small architectural details.

Projects: Holistic Master Planning – a Living Process to Drive Vision: The Prince Mohammed Bin Salman Non Profit City General Master Plan in Riyadh

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BASF Middle East & Egypt

At BASF, we create chemistry for a sustainable future. We combine economic success with environmental protection and social responsibility. More than 117,000 employees in the BASF Group work on contributing to the success of our customers in nearly all sectors and almost every country in the world. Our portfolio is organized into six segments: Chemicals, Materials, Industrial Solutions, Surface Technologies, Nutrition & Care and Agricultural Solutions. BASF has been producing sodium nitrate in Ludwigshafen for over 90 years. Along with its use in the solar industry, it is primarily used in the processing of glass and foods. BASF supplies its salt to all solar tower power plants around the world: clear proof of BASF's outstanding product quality.

Project: BASF Contributes to Egypt's Future

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Dorsch Gruppe – Middle East

For over 70 years, the companies of Dorsch Gruppe have been respected consulting and engineering partners for industrial clients, private investors and public institutions. The Dorsch Gruppe with more than 3,400 employees running over 2,000 projects per year in more than 50 countries is Germany's largest independent planning and consulting company. Our experts work in a future oriented and quality conscious way for people in all Arab countries. They offer an entire performance spectrum in the fields of project development, infrastructure, architecture, airports, oil and gas, urban planning, water, transport, marine, landscape and environment as well as asset management and operation maintenance.

Project: Saudi Green Initiative – A Leap Towards Regional Sustainable Future

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Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

GIZ is a private limited liability company owned 100 % by the government of the Federal Republic of Germany. As a service provider in the field of international cooperation for sustainable development and international education work, GIZ is dedicated to shaping a future worth living around the world.

Project: Supporting Saudi Arabia's future role in a decarbonising world – Germany's new Hydrogen Diplomacy Office in Riyadh

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ICEPS - International Clean Energy PartnerShip e.V.

The Bonn Climate Project is a renewable energy and sectoral coupling project for developing countries and was founded in 1999/2000 at the presentation of „Hydra": the world's first civilian hydrogen fuel cell boat for safe use and passenger transport, with hydrogen/fuel cell propulsion. The Bonn Climate Project bundles the combined knowledge and all the projects needed for energy generation with H^2 below one label. The whole idea is based on hydrogen and fuel cells and has been developed by a multitude of domestic and international experts.

Project: Urban power station of the future: for Electricmobility with Hydrogengas and Fuel Cells as well as Batteries (Bonn Climate Project)

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REMA TIP TOP

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REMA TIP TOP is a globally operating system provider of services and products in the field of conveying and treatment technology as well as tire repair. The company has a global service network and offers a wide range of rubber products, linings and coatings for both the industrial and automotive sectors. Over almost a hundred years, the company has built up unique expertise in the development of materials and industrial services and is active in the belting, material processing, surface protection and automotive sectors.

Project: 360-degree service to ensure reliable conveyor operations

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Roland Logistik GmbH

As an international project forwarding company, we have our origins in project logistics. Although project logistics is in itself a challenge for the forwarding agent, we have gone one step further and specialized in the particularly challenging regions of the world. With our headquarters in Delmenhorst near Bremen, our own office in Libya, representative offices in IRAN, Egypt, Syria and a network of specialists in the Arab, South American and African world, we can offer complete logistics packages of the highest quality. In target-oriented logistics, professional communication, along with an understanding of foreign cultures, is the key to a flawless transport chain. We speak the national languages of the countries of destination, including Arabic, Persian, Kurdish, Turkish, French, and English.

Project: Global transport solutions on turnkey projects, from door upto unloaded project site. (E.g. Libya, Iraq, Syria, Egypt, Iran, UAE, KSA, Colombia, India, and USA).

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Siemens Middle East

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Siemens is a technology company focused on industry, infrastructure, transport, and healthcare. From more resource-efficient factories, resilient supply chains, and smarter buildings and grids, to cleaner and more comfortable transportation as well as advanced healthcare, the company creates technology with purpose adding real value for customers.

Project: Smart Cities Find Fertile Ground in the Middle East

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wilo

Wilo Middle East

The Wilo Group, who celebrates its 150-years-anniversary in 2022, is one of the world's leading premium suppliers of pumps and pump systems for the building services, water management and industrial sectors. In the past decade, we have developed from a hidden champion into a visible and connected champion. Today, Wilo has 8,200 employees employees worldwide. Our innovative solutions, smart products and individual services move water in an intelligent, efficient and climate-friendly manner. We are also making an important contribution to climate protection with our sustainability strategy and in conjunction with our partners. We are systematically pressing ahead with the digital transformation of the Group. We are already the digital pioneer in the industry with our products and solutions, processes and business models.

Project: Identifying the right sustainable solutions: Wilo supplied pumps and systems to the FIFA World Cup Qatar 2022 stadiums

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DCM – Druck Center Meckenheim GmbH
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JUNE 2022

Arab-German Yearbook 2022/23

Construction, Energy and Consulting

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