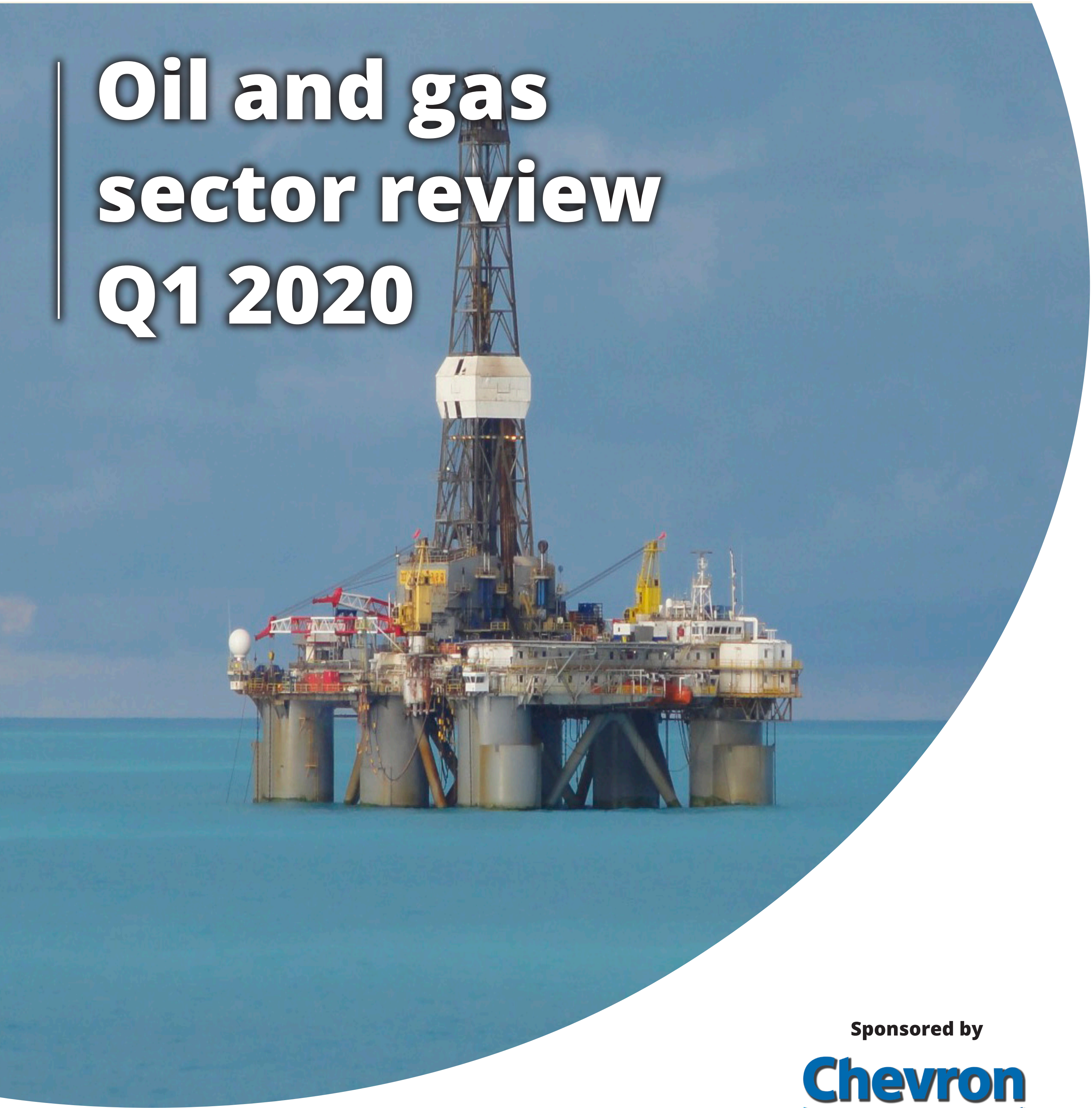
Global Corporate Venturing

April 2020

Oil and gas sector review Q1 2020



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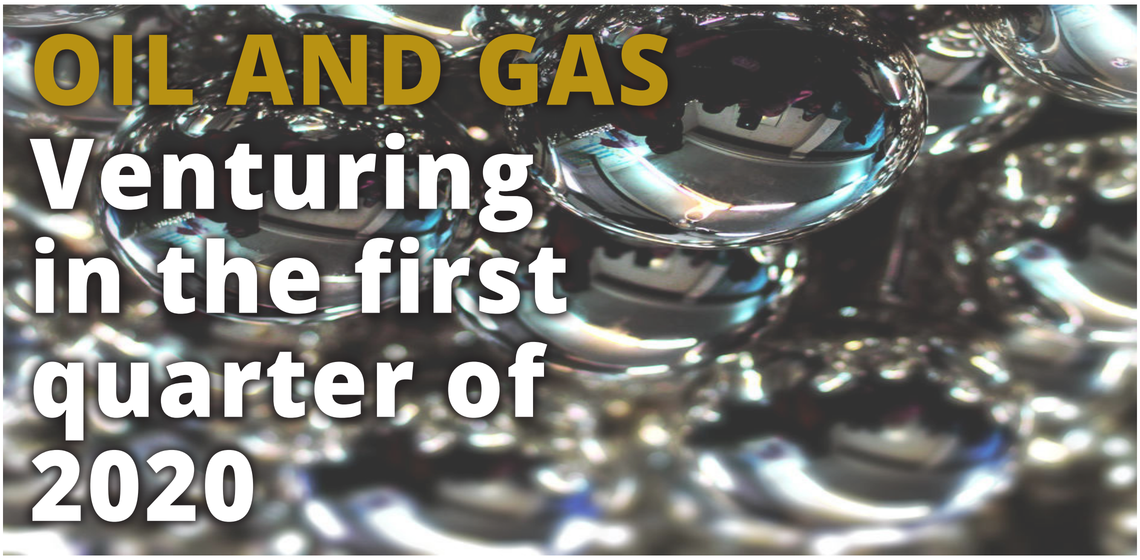


OIL AND GAS
Venturing in the first quarter of 2020

Kaloyan Andonov, analyst at GCV Analytics

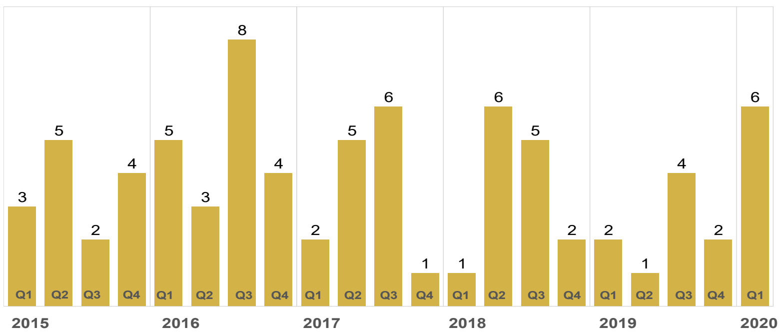
To say the first quarter of 2020 was an eventful start of the year would be an understatement, for both venture capital and the world as a whole. This is especially the case in the oil and gas industry, which is currently under a type of strain unseen in decades, on both the demand and supply side. These pressures on both sides are causing oil prices to fluctuate between $20 and $30 a barrel, while break even prices for most oil companies are generally between $40 and $50 (and even higher). On the supply side, more oil is being offered on world markets and prices are being pushed down to levels that make it economically unviable for US-based shale oil producers to continue operations. The latter has been going on for some time before the pandemic, as evidenced most clearly in the decline of US oil rig count, which was down nearly 25% in 2019, according to data from Baker Hughes.

With the outbreak of the Covid-19 pandemic and people instructed to stay at home around the globe, the demand for oil has suffered a significant drop, estimated by some traders at 20%. It is still unclear for how long oil prices could remain low, as both economic and political forces are involved in the price formation process. Some investors in the sector, like the commodity-focused mutual fund Goehring and Rozencwajg, have suggested the world's foremost producer of oil, Saudi Arabia, may not be able to "wage a price war for long" as it lacks the fiscal ability to do so and would require an oil price of $80-$85 to balance its budget. However, this is still a conjecture because it is unclear how pressures on the demand side will evolve in the coming months.

Since 2014 we have been observing a shift of focus among oil and gas corporate venturers, which still held true even during this impactful first quarter of the year. Most disclosed deals by oil and gas corporate venturers went into emerging enterprises from non-core areas, primarily in cleantech, IT as well as transport and mobility. It has been precisely such non-core areas which have been deemed with most disruptive potential to the core business of oil and gas companies, as low-carbon energy technologies may replace or considerably eat up the position of fossil fuels. The adoption of electric vehicles may affect a considerable part of the ultimate customer base of oil and gas companies. We have also seen an increasing digitisation of industrial activities, which exerts tangible impact over production and efficiency. However, given the current situation of industry, it is not unreasonable to expect to see more investments in core oil and gas technologies in the short run, particularly in companies whose solutions provide significant cost-savings.

Investments in core oil and gas tech technologies will continue to form part of the portfolios of corporate venturers from the sector. This is largely due to the capital-intensive nature of the industry and its margins, contingent on the ups and downs of commodity prices. Thus, any innovation improving processes and reducing fixed costs would be welcomed and likely embraced (and now more than ever!). Over the long haul, corporate venturing subsidiaries of incumbents from this industry will continue to bring mostly strategic rather than direct

Corporate-backed deals in oil & gas enterprises 2015-Q1 2020



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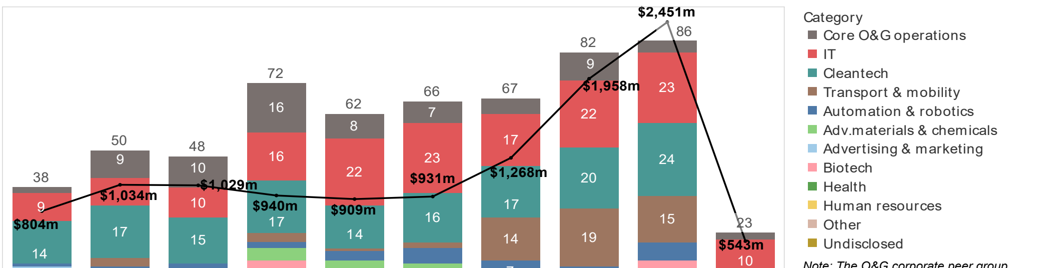
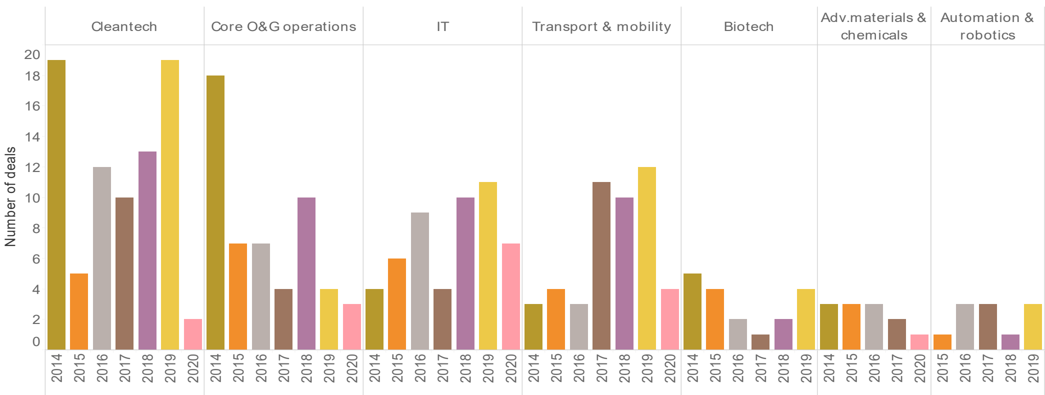
Investments by O&G corporate peer group 2011-Q1 2020



Note: The O&G corporate peer group includes:Chevron, Shell, Statoil/Equinor, BP, Saudi Aramco, Exxon Mobil, Total, Eni, Schlumberger, Subsea 7, E.On, Engie, Siemens/Next47, Eneco, Sumitomo, Petrobras, Repsol, Air Liquide et al.

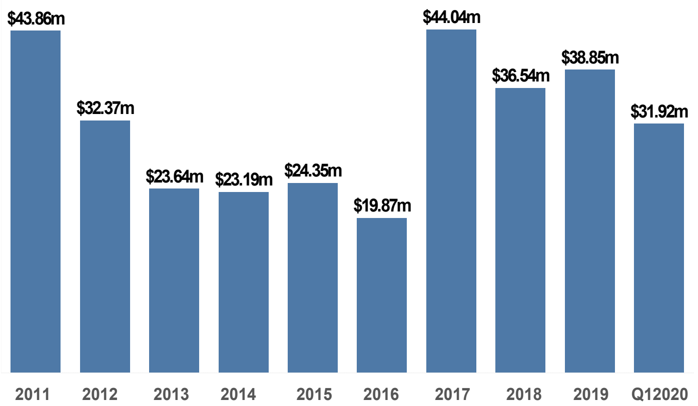
Type of oil & gas venturing investments by year



financial value through their investments. Strategic benefits may come in the form of building an ecosystem, finding suppliers or helping specific existing business units with specific technical challenges.

During the first quarter of 2020, transport, IT and cleantech startups received more attention than other areas. The average size of deals in which oil and gas corporate venturing peers participated was $31.92m, relatively comparable to the levels we registered in the past two years. In total, we tracked 23 deals by the peer group that were worth an estimated $543m – figures broadly in line with those from last year's quarters.

Average size of deals backed by oil & gas CVCs 2011-Q1 2020



In recent years, many oil and gas corporate venturers have been focused on investing in an increasingly digitised future of disrupted mobility and transport and with emerging energy coming from renewable and sustainable sources. Investments in the first quarter of 2020 were no exception from this trend. As valuations in these

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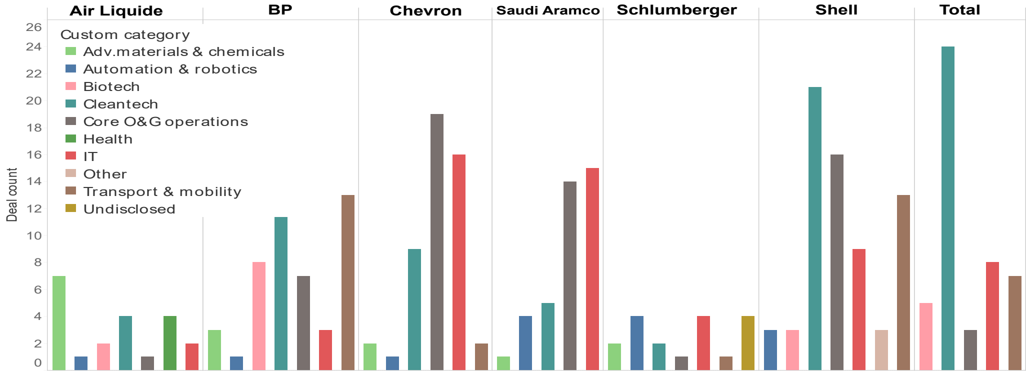
Type of investment by company 2014 - Q1 2020



areas of innovation were growing, the average size of deals expectedly rose as well. However, we are yet to see how the current pandemic and the expected subsequent downturn will affect such valuations.

UK-based BP has disclosed a significant number of rounds in biotechnology, cleantech and transport companies since 2014, along with investments in core operation technologies. France-based Total has placed heavy bets on cleantech and transport, while Anglo-Dutch company Shell has been focused on both cleantech and core oil and gas technologies. US-based Chevron's publicly disclosed commitments revolve around core energy operations, the digital dimension of its operation and in most recent times cleantech as well. Saudi Arabia-based Saudi Aramco has historically focused its minority stake investment in core technologies, IT, automation and increasingly cleantech as well. In brief, nearly all oil and gas majors are involved in some way with the low carbon and advanced mobility opportunities on the venturing scene.

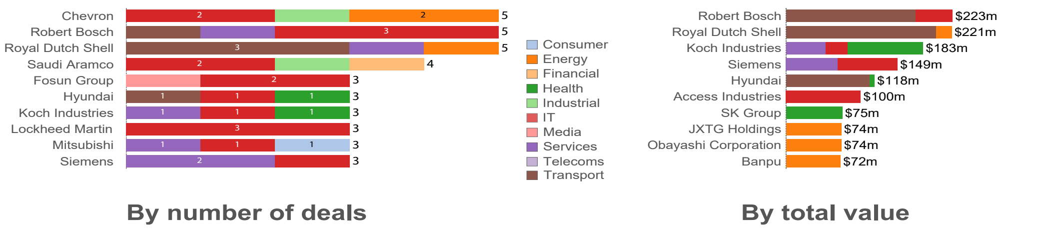
Deals

The oil and gas companies found among top corporate venture investors from the industrial and energy sectors were oil and gas companies Chevron, Shell and Saudi Aramco. In the first quarter of 2020, we reported notable deals involving oil and gas corporate venturers.

Diversified holding company Exor paid $200m for an 8.87% stake in Via Transportation, US-based mobility services and software provider backed by carmaker Daimler and media group Hearst. The investment came as part of a larger series E round of undisclosed size also featuring oil and gas supplier Shell, property manager Mori Building and Hearst Ventures, Hearst's corporate venturing arm. New investor Macquarie Capital and existing backers Pitango, 83North, Ervington Investments, Planven Ventures, Broadscale Group and RiverPark Ventures filled out the round. Via provides a range of on-demand or pre-scheduled urban mobility services covering ordinary urban and rural transport to specialised services across more than 20 countries. Its algorithm optimises transport for maximum efficiency and can be incorporated into existing transport management systems.

Germany-based contractor services procurement marketplace Scoutbee closed a $60m series B round featuring Next47, a corporate venturing vehicle for industrial equipment and appliance producer Siemens. The round was led by venture capital firm Atomico, with participation from its peers Lakestar, Toba Capital, 42Cap and Holtzbrinck Ventures. Founded in 2015, Scoutbee runs an artificial intelligence-equipped software platform for enterprise clients to source pricing quotes for procurement services offered by a range of third-party

Top energy and industrial investors Q1 2020



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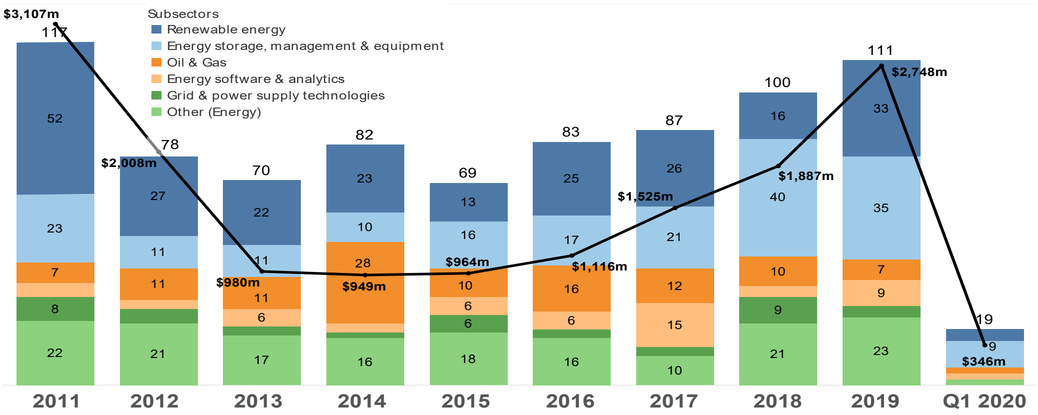
Energy sector deals by subsector 2011-Q1 2020



suppliers. The company's clients include automotive brand Audi, aerospace technology producer Airbus and industrial technology and appliance producer Robert Bosch.

Inpria, a US-based semiconductor manufacturing technology spinout of Oregon State University (OSU), received $31m in a series C round led by petrochemical materials provider JSR Corporation. Memory semiconductor provider SK Hynix also took part, as did TSMC Partners, Intel Capital, Aliad, Applied Ventures and Samsung Venture Investment: vehicles for chipmakers TSMC and Intel, industrial gases supplier Air Liquide, semiconductor manufacturing technology provider Applied Materials and electronics producer Samsung. Founded in 2007, Inpria produces a range of metal oxide photoresists – light-sensitive materials – for extreme ultraviolet lithography, a semiconductor manufacturing process that relies on a narrow wavelength of ultraviolet light to form patterns on photoresists at a high resolution.

US-based internet-of-things (IoT) software developer FogHorn completed a $25m series C round led by industrial conglomerate LS Corp. Dell Technologies Capital, Intel Capital, Saudi Aramco Energy Ventures (SAEV), Honeywell Ventures, GE Ventures and Robert Bosch Venture Capital (RBVC) also invested, on behalf of computer producer Dell, Intel, Saudi Aramco, industrial appliance maker Honeywell and industrial technology manufacturers General Electric (GE) and Bosch. The round was filled out by technology investment firm March Capital Partners and venture capital firm Forte Ventures and Darling Ventures, increasing FogHorn's funding to

Top deals backed by oil & gas corporate venturers Q1 2020

Company	Round	Sector	Size	Venture investors
Via	-	Transport	200	83North | Broadscale Group | Ervington Investments | EXOR | Hearst | Macquarie | Mori Trust | Pitango | Planven Investments | RiverPark Funds | Royal Dutch Shell
Inpria Corporation	C	IT	31	Air Liquide | Applied Materials | Intel | JSR | Samsung | SK Hynix | Taiwan Semiconductor
TactoTek	C	Industrial	25.3	3M | Cornes | Repsol
FogHorn Systems	C	IT	25	Darling Ventures | Dell | Forté Ventures | General Electric | Honeywell | Intel | LS Corporation | March Capital Partners | Robert Bosch | Saudi Aramco
Seeq Corporation	B	IT	24	Altira Group | Chevron | Saudi Aramco | Second Avenue Partners
Forge Hydrocarbons	-	Energy	21.4	Royal Dutch Shell | Valent Low-Carbon Technologies
Clean Carbon Solutions	-	Energy	16	Chevron | Marubeni Corporation | Wave Equity Partners
Clarke Valve	C	Industrial	10	Chevron | Saudi Aramco | YBA Kanoo
Worlds	A	IT	10	Align Capital | Chevron | Hypergiant Industries
Vakt	-	Financial Services	5	Saudi Aramco

$72.5m since it was founded in 2014. Foghorn has created an edge computing software platform designed for use in artificial intelligence (AI) and machine learning (ML) applications in the industrial and commercial sphere. It said it increased its annual licences tenfold year on year in 2019 and is prioritising growth in East Asia.

Finland-based in-mold structural electronics producer TactoTek completed a €23m ($25.3m) series C round featuring diversified conglomerate Cornes, materials product maker 3M and oil and gas supplier Repsol. Venture capital fund Nordic Option and investment firm Valeado co-led the round while 3M and Repsol invested through subsidiaries 3M Ventures and Repsol Energy Ventures. Bryan, Garnier & Co was financial adviser on the deal. TactoTek develops, produces and licenses injection molded structural electronics: thin, lightweight 3D technology that allows electronics to be placed in areas where it would not otherwise be feasible. The funding will support the company's expansion into specific applications for the industrial, automotive and IoT sectors.

Carbon Clean Solutions (CCSL), a UK-based low-cost CO_2 capture and separation technology, is one company tackling the climate change challenge and it raised $16m in from three global investors - corporate venturing unit Chevron Technology Ventures, Japan-based trading conglomerate Marubeni Corporation and private equity firm Wave Equity Partners. Barbara Burger, president of oil major Chevron's corporate venturing unit, said: "We invest in breakthrough technologies that both lower emissions in oil and gas and are integral to low carbon value chains. Our investment in Carbon Clean Solutions aims to help commercialise and scale carbon capture utilisation and storage technologies, a key part of delivering on our commitment."

IN Venture, the Israel-focused investment arm of conglomerate Sumitomo, co-led a $10m first close of Israel-based mobile analytics technology developer Anagog's series C round. The tranche was co-led by venture capital firm MizMaa and included tire producer Continental. Anagog raised $1.5m from Skoda in July 2018 and an undisclosed sum from fellow carmaker Porsche earlier, having secured $10m in series B financing from investors including MizMaa and automotive manufacturer Daimler in March the same year. Launched in 2010, Anagog has develope JedAI which claims it can help companies provide highly personalised, contextual services and experiences to their customers by interpreting smartphone sensor data into insights, i.e., consumer behaviour, lifestyle, journey and prediction of what they are likely to do next.

Pando, an India-based developer of supply-chain management software, raised $9m in funding from investors including Siemens' Next47 unit. Chiratae Ventures led the round, which also featured fellow VC firm Blume Ventures and angel investors Ramkumar Narayan, Alok Mittal and Saikiran Krishnamurthy. It followed a $2m seed round led by Nexus Venture Partners and backed by assorted angel investors in April 2018. Founded in 2015, Pando has developed an open-market digital delivery management platform, which allows large, distributed businesses to take control of their supply-chain and transforms logistics system into an opportunity for customer acquisition, retention and value.

Japan-based nucleic acid drug developer Luxana secured ¥650m ($5.9m) in a series A round led by Osaka University Venture Capital that included Summit Pharmaceuticals, a pharmaceutical services subsidiary of diversified conglomerate Sumitomo, as well as chemicals producer Nissan Chemical Industries, Mizuho Capital and Senshu Ikeda Capital, subsidiaries of financial services firms Mizuho Bank and Senshu Ikeda Bank. Luxana had received approximately $1.2m in debt financing from Japan Finance Corporation over September and November 2019.

BP Ventures, the venturing unit of oil major BP, invested $3.6m in China-based energy management specialist R&B Technologies. The round was BP's first venture into AI technology in China. R&B Technologies has developed energy management systems designed to predict, control and improve a building's energy use, supporting BP Alternative Energy's focus on low-carbon power, storage, digital energy value chain and wider Energy as a Service (EaaS) offers.

US-based on-demand car care service provider Get Spiffy closed a strategic investment of undisclosed size by Shell Ventures, the venturing unit of oil major Shell. Founded in 2014, Spiffy offers on-demand automotive services for fleets, office parks, and residential customers in 20 cities in the US. The company's technicians operate out of fully-equipped vans to provide on-site services, such as car detailing, oil changes, and tire installations. Used water, oil, and tires are captured and recycled as a part of the company's eco-conscious approach to vehicle maintenance.

Energy utility Engie provided an undisclosed amount of funding for Spain-based hydrogen production system developer H2Site through its Engie New Ventures subsidiary. H2Site has also entered into a research cooperation partnership with the corporate's Engie Lab Crigen subsidiary. Founded in 2019, H2Site has developed a platform which aims at addressing the issue of decentralised production, transport and storage of hydrogen with a compact and cost effective on-site solution. The platform is based on a one-step industrial process combining membranes in a reactor.

Canada-based pipeline inspection technology developer Ingu Solutions raised growth capital from Energy Innovation Capital and Chevron Technology Ventures. The funding round will enable Ingu to grow its team, scale its data collection platform and analysis, and expand its global presence. Founded in 2018, Ingu has developed a pipeline screening tool, dubbed Pipers technology, which detects leaks, geometric defects, magnetic anomalies, and deposits. The company's self-service business model reduces inspection costs while strengthening preventive maintenance. It enables integrity assessment in unpiggable pipelines, while disrupting alternatives costing an order of magnitude more in other pipelines.

Shell invested an undisclosed amount in Germany-based on-demand freight transport service InstaFreight through Shell Ventures. InstaFreight had received $9.5m in series A funding from an undisclosed investment firm in 2017 and will use the latest funding to improve its technology and expand its services to more customers across Europe. Founded in 2016, InstaFreight is a B2B digital forwarding company which operates as a one-stop shop for road freight. It targets commercial customers and offers them a click-and-buy experience with instant pricing and allow for a fast and convenient booking experience online.

Shell added an undisclosed amount to the $20m UK-based transport ticketing platform developer Masabi raised from Smedvig Capital, MMC Ventures, and unnamed existing investors in April 2019. Founded in 2001, Masabi has developed a mobile ticketing and fare collection platform called JustRide which enables passengers to pay for travel by tapping a contactless bank card, smartphone or smartcard instead of buying a physical ticket. The cloud-based platform also includes tools that allow transport providers to audit ticket sales, access usage reports and manage customer service requests.

Samsung Ventures Investment Corporation, a subsidiary of consumer electronics producer Samsung, led a series B round of undisclosed size for Switzerland-based neural network developer Nnaisense. The round also included glass ceramics manufacturer Schott and Repsol Energy Ventures. It came after an undisclosed amount of series A funding from VC firm Alma Mundi Ventures in 2017. Launched in 2014, Nnaisense develops AI technology aiming to build large-scale neural network solutions for superhuman perception and intelligent automation, with the ultimate goal of marketing general-purpose AIs. The company has partnered major players in diverse industries including steel production, finance, mobile devices, and autonomous vehicles in an effort to validate its proprietary technology.

Qarnot, the France-based developer of a computer storage system that also works as a room heater, raised $6.5m from investors including retail group Groupe Casino and Engie Rassembleur d'Énergies, the social impact fund owned by energy utility Engie. The corporates joined Banque des Territoires, Caisse des Dépôts and A/O PropTech, and the round followed $2.7m in seed capital from Colony Data4 and Avolta Partners in 2016. Qarnot claims to heat buildings for free with computers, as it has designed its Q.rad, the first computing heater embedding microprocessors as a heat source. If present in every room and embedding more than 20 sensors, Q.rads make buildings smart, according to the company.

Financial services firm Citi topped up its investment in Komgo, a Switzerland-based operator of a blockchain-powered trade finance platform. Komgo launched in September 2018 with an undisclosed amount of capital from founding investors including Citi and fellow banks Société Générale, ING, Sumitomo Mitsui Banking Corporation, ABN Amro, BNP Paribas, Crédit Agricole, Macquarie, MUFG Bank, Natixis and Rabobank in addition to Shell, product tester SGS and commodity traders Mercuria, Koch Supply & Trading and Gunvor. Komgo has built an Open Commodity Trade Finance platform, which uses blockchain technology to provides ways for traders to optimise their working capital via financing instruments and insurance.

Siemens' Next47 unit contributed to an $80m series C round for US-based video security technology provider Verkada that valued the company at $1.6bn. The corporate was joined by VC firms Sequoia Capital, Meritech Capital and Felicis Ventures, and the round increased Verkada's overall funding to $139m. Verkada provides security systems for business customers that consist of on-site cameras and cloud software that allows users to access detailed video of their buildings in real time. They include analytics capabilities and tools that warn users when the hardware is being affected by tampering.

US-based spatial-analysis software developer Worlds spun off from spatial modelling technology startup Hypergiant Sensory Sciences with $10m in series A funding from investors including Hypergiant Sensory's parent company, Hypergiant Industries, as well as Chevron Technology Ventures. The round was led by private equity firm Align Capital Partners, which contributed to Hypergiant Sensory's $5m series A in late 2018, and included venture capital firm Piva. Worlds is developing a technology for extended reality in a physical space. The company claims its technology would be the first of its kind and would use deep learning combined with IoT to create a 4D environment.

Canada-based biofuel developer Forge Hydrocarbons raised an undisclosed amount from Shell Ventures and a follow-on contribution from Valent Low-Carbon Technologies, which will help build a commercial-scale, biofuel production plant in Sombra, Ontario. Forge has patented Lipid-to-Hydrocarbon (LTH) technology creates renewable jet fuel, diesel and naphtha from waste fats and oils. Forge's renewable diesel and jet fuels are supposed to be 90% less carbon-intensive than fossil-based diesel. The company claims they are cheaper to produce than conventional renewable diesel and are "drop-in" ready, requiring no specialised blending infrastructure.

SAEV invested $5m in UK-based commodity trading technology developer Vakt, a company which has reimagined commodity post-trade processing underpinned by blockchain technology. The investment will help the company with further development of the platform and expansion into new markets – particularly into Asia. The Vakt platform manages physical energy transactions from trade entry to final settlement, eliminating reconciliation and paper-based processes. Built using blockchain technology, the platform provides a single source of truth for buyers and sellers that is safeguarded with an immutable, distributed audit trail.

We also tracked deals in which corporates from other sectors backed emerging companies relevant to the oil and gas space as well as one exit.

VC fund Drone Fund supplied an undisclosed amount of funding for SkyX, a Canada-based aerial data provider backed by technology conglomerate Kuang-Chi. Founded in 2015, SkyX has developed its Unmanned Aircraft System, which is a platform for capturing data – ranging from infrastructure inspection to detecting hydrocarbon leaks – with great accuracy and at a reduced cost relative to manned aircraft. According to the company, it is purpose-built drone for inspecting and monitoring assets like pipelines or hydroelectric transmission lines over long distances.

RigUp, a US-based energy workforce tool provider backed by GE, raised $28.7m in funding from undisclosed investors. Founded in 2014, RigUp operates a marketplace that enables operators and service providers in the energy sector covering oil and gas, solar and wind power installations, to source, manage and pay contractors. It has also built a digital marketplace allowing users to onboard and pay vendors. The company additionally provides an app for managed field services that enables clients to post tasks and receive confirmation from a qualified provider in minutes, compared to the weeks traditionally required by a manual process.

Ambyint, a US-based oil production technology developer backed by General Electric and Norway-based oil and gas producer Equinor, received $15m in series B funding. The round was led by investment firm Cottonwood Venture Partners and included venture capital firm Mercury Fund in addition to Ambyint's management team. Founded in 2004, Ambyint provides AI-equipped software that automates processes bolstering production from oil and gas wells, specifically through artificial lift, the process where oil is coaxed to surface by applying additional pressure to underground reservoirs.

Test and measurement technology group Eddyfi/NDT announced its acquisition of undisclosed size of Halfwave, Norway-based developer of ultrasound measurement technology. The acquisition gave exit to existing investors, including Shell Ventures and Chevron Technology Ventures. Halfwave has developed a proprietary Acoustic Resonance Technology (ART), an ultrasound-based technique which allows high-precision measurements in imperfect conditions and without the need for liquid couplant. The company is currently active worldwide in the field of Subsea inspection and Pipeline inline inspection (ILI). The company counts over 70 employees and has offices in Oslo and Houston.

Funds

Saudi Aramco Energy Ventures (SAEV) announced its intension to establish a $400m to $500m fund in 2020. The unit will continue to invest in companies developing technology relevant to the core strategic areas for its parent company. SAEV opened an office in Beijing, China and already operates offices in London and Aberdeen in the UK, Houston in the US and Oslo in Norway. SAEV launched with a $500m fund in 2012 and has invested in 45 companies to date. The report of a second fund follows rumours in 2018 that Saudi Aramco was mulling the creation of a separate $1bn vehicle. Saudi Aramco completed the biggest ever initial public offering when underwriters took up a greenshoe option and increased its size to $29.4bn. The listing has given Saudi Aramco a valuation of $1.87 trillion, making it the world's most valuable company.

Canada-based venture capital fund ArcTern Ventures raised a second cleantech-focused fund with C$200m ($153m) from backers including energy producers Equinor and Suncor Energy. Financial services provider Toronto-Dominion Bank is also among the limited partners, as are Canadian government-owned Venture Capital Catalyst Initiative, pension fund Omers and the state-owned Business Development Bank of Canada. Other investors include enterprise promotion board Investissement Québec, Norwegian state-owned fund Nysnø, an unnamed Canada-based pension fund, and family offices from North America and Europe. The fund's initial $46m close took place in 2018 and was anchored by Equinor Energy Ventures – the firm's corporate venturing arm – and Omers. ArcTern subsequently increased the fund size to $124m in September 2019. Founded in 2012, ArcTern Ventures backs early-stage cleantech companies with the aim of capturing returns as economies shift toward low-carbon technologies. Its target segments include energy storage, mobility, advanced manufacturing, resource efficiency, agtech and foodtech.

DuPont Ventures, the corporate venturing subsidiary of chemicals producer DuPont, reportedly closed at the end of March 2020. Formed by DuPont in 2003, DuPont Ventures' made strategic investments on the corporate's behalf. Its investments have included deals for biofuel feedstock supplier NexSteppe, taste modification molecule developer Linguagen and ethernet services provider Actelis Networks. However, the unit was relatively "quiet" in recent years, as its last disclosed investment was a participation in a $75m round for drone management software provider PrecisionHawk in early 2018. DuPont Ventures' closure came as part of a restructuring that will involve the company's larger corporate innovation activities being cut as part of a cost-saving process.

Spain-based venture capital and private equity firm Cardumen Capital raised $60m for its initial fund with commitments from corporates including Repsol. Repsol invested through Repsol Energy Ventures. The fund's

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other limited partners include InnoCells, an investment vehicle for financial services firm Banco Sabadell, as well as undisclosed corporates, financial institutions and private investors based in Europe and Latin America. Cardumen was founded in 2017 by Gonzalo Martínez de Azagra and Roy Gottlieb, former executives at Samsung Ventures Israel, a corporate venturing subsidiary of Samsung. The firm already has half a dozen portfolio companies and targets Israel-based early-stage deep technology developers, focusing on areas including AI, big data, cybersecurity, machine vision and IoT.

Spain-based natural gas supplier Enagás and investment banking firm Alantra launched a €150m ($170m) vehicle called Clima Energy Transition Fund to back renewable energy companies situated in Europe. The fund will acquire minority stakes in late and growth-stage developers of products and technologies in the biogas, decarbonisation, energy digitisation and efficiency, green hydrogen and sustainable mobility sectors. A management company will be created to oversee the fund's activities, with 30% of its shares being owned by Enagás and the remainder by Alantra. The new entity will fall under Alantra's alternative asset management group and the firm will provide investment know-how in areas including venture capital and private equity. Enagás is providing at least $22.7m for the fund and will offer insights from its experience in the gas industry. The company lready runs a corporate venturing unit called Enagás Emprende, which is led by Emilio Martínez Gavira and which has invested roughly $17m across a dozen startups in the innovative energy space.

Energy management and automation technology producer Schneider Electric supplied $10m for Israel-based venture capital firm Grove Ventures' $120m second fund. The oversubscribed fund, Grove II, was closed without the firm identifying any limited partners, though it described them as institutional and strategic investors as well as industry leaders. Founded in 2016, Grove Ventures focuses on early-stage startups in deep technology areas, such as industry 4.0, cloud infrastructure and AI, with a particular interest in Israel-based companies looking to expand into Europe and the US. Grove II has already invested in two companies, though Grove Ventures has not yet disclosed their identities. It now has $230m under management, having closed its inaugural fund at $110m in 2017.

Diversified Indonesia-based conglomerate Astra International established a corporate venture capital subsidiary called Astra Mitra Ventura. Astra International's core business is in automotive retail, but its activities also cover areas such as heavy equipment and mining, financial services, agriculture, IT, infrastructure and logistics. The corporate has already invested in several companies off its balance sheet, including ride hailing service Gojek and freight services marketplace Trukita. Astra Mitra Ventura will make early-stage investments and its priority areas are manufacturing and infrastructure technology. The fund will offer equity funding and convertible note financing as well as project financing, working capital and equipment financing. It is yet to raise a formal fund and will initially source capital through its parent company's balance sheet.

JSW Ventures, the corporate venture capital vehicle for India-based conglomerate JSW Group, was reportedly preparing to reach the first close of a fund expected to reach Rs 3.5bn ($49m). The fund in question will be JSW Ventures'. Founded in 1982, JSW Group operates in several different industries. Its core business is steel production but it also has interests in energy, cement, paint, real estate and infrastructure work. JSW Ventures invests in software-as-a-service providers, e-commerce platforms, mobile consumer-focused companies and healthcare, finance, education and data analytics technology developers.

People

Mikko Huumo joined Finland-based oil provider Helen as director of its corporate venturing unit and will set up a fund focused on energy transition. Helen Ventures hired Huumo after he had spent nearly seven years at local energy utility Fortum, most recently as head of external venturing. Huumo said Helen Ventures' €50m ($55m) fund will focus on electric mobility, energy-related digital solutions, decarbonisation, smart energy solutions and the circular economy, adding: "So, one could say that very strong link with e-transition." Fortum is expected to continue its corporate venture investing activities through an internal promotion. It has also made a cornerstone commitment to US-based venture capital firm Valo Ventures, which was launched by CapitalG alumnus Scott Tierney, raising $175m for its debut fund last summer.

Mikko Huumo

Tobias Hasenjäger left VNG Innovation, the corporate venturing arm of Germany-based natural gas provider Verbundnetz Gas (VNG) Group, where he was senior investment manager. Hasenjäger had joined VNG Innovation in early 2018 from University of Kassel-affiliated innovation hub Science Park Kassel, where he had been an investment manager since 2014, investing in university spinouts from the institution's seed-stage funding scheme, Unikat Finance, and serving as a mentor. Formed in 2015, VNG Innovation partners and backs startups developing energy-related technologies, including energy digitisation, conversion, efficiency and storage along with mobility and sustainability technology. VNG Innovation's portfolio companies include water treatment technology provider Akvola Technologies, meter-reading app developer Eigenheim Manager and Infrasolid, the creator of an infrared radiation-based gas detection system.

SPECIAL REPORT

John Wong left his position of director of corporate development at wireless mobile technology producer InterDigital and joined Honeywell as director of ventures. Wong had also been a principal at venture capital firm NextStar Partners since 2016, focusing on IoT, mobile and connected technology developers, retaining the position, according to his LinkedIn profile. Honeywell's corporate venturing arm, Honeywell Ventures, was founded in 2017 and concentrates on early-stage companies working on technologies such as advanced manufacturing, IoT and materials science as well as software and analytics startups. Wong will invest in IoT and smart building technology developers on behalf of Honeywell Ventures.

Tobias Hasenjaeger

Michael Brandkamp, formerly managing director of High-Tech Gründerfonds, a German state and corporate-backed venture capital fund, left to become a general partner at European Circular Bioeconomy Fund (ECBF). ECBF will be established in Luxembourg in order to accelerate late-stage companies and bring circular technologies – an economic system aimed at eliminating waste and the continual use of resources – to market. The fund was cornerstoned by the European Commission as part its work on developing so-called blended finance. Brandkamp will now have to raise private capital to blend in with the state funding. The EIB is working on further blended finance initiatives as it prepares for next year's budget lasting from 2021 to 2027 (called Horizon Europe) with a focus on sustainable development goals.