DCA CHINE ANALYSE

Presentation
(September 2020)

THE CHINA INDUSTRIAL MONITOR

- INFORMATION & ANALYSIS -

There are many quality publications about China, and there are many quality publications about Industry ; but there was no regular synthetic analysis publication dedicated to **Industry in China**. This is the single, and simple, explanation for the existence of *THE CHINA INDUSTRIAL MONITOR*.

Its aim is to **bring decision-makers strategic analysis** focused on the Chinese market, home to a quarter of the World's manufacturing output, and on industry (which different sectors increasingly overlap) and directly related sectors (Logistics and Finance, and Communist Party and Government as well as Corporate appointments).

It works on an Information & Analysis approach, as selection of informations to appear in it, is made on wether their deciphering will bring any Value Added to the knowledge of China's industrial panorama and its permanent evolution. The idea behind it is that, **if you are part of the Show, it's better to know what's on the scene, and behind the scenes**.

THE CHINA INDUSTRIAL MONITOR is based on the experience, exclusive databases and sources of DCA Chine Analyse, which has been monitoring the evolutions of China's economy over the last 25 years. It is totally independant from any group or administration, Chinese or Foreign, so as to bring its readers objective analysis to **help decision-making**.

This Demo presents you the full scope of covering by *THE CHINA INDUSTRIAL MONITOR*. Standard issues, published fortnightly, include an average of 30 « New / Analysis » items in its five sections (Aerospace, Automotive, Energy, Other Industries and Logistics & Finance), plus Appointments.

We wish you a pleasant reading of this Demo Presentation, and hope reading *THE CHINA INDUSTRIAL MONITOR* will become a pleasant and usefull fortnightly habit for you.

JFD

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AEROSPACE

Stay updated on developments in **Programs*, Corporate environment, Projects, Technologies** and **Strategic plans** in China's Aerospace industry.

* EXEMPLE : ARJ21 program of COMAC (Commercial Aircraft Corp of China) :

THE CHINA INDUSTRIAL MONITOR 07/15/2020

Air China commercial service for the ARJ21

Two weeks after its delivery by COMAC (Commercial Aircraft Corp. of China – please see The China Industrial Monitor Issue 34, 06/30/2020), the first ARJ21 regional jet to integrate the fleet of Air China has entered operation. First commercial flight was on the 500 kilometers route from Beijing to Xilinhot, in Neimenggu. Air China thus became the fourth airline (following Chengdu Airlines, Genghis Khan Airlines and Jiangxi Air), and the first « Major », to operate the model.

ANALYSIS > **Neimenggu as operational test ground**

Air China, that is to receive two other ARJ21s before end of 2020 (just as China Southern Airlines and China Eastern subsidiary OTT – One Two Three Airlines), indicated that the type would be deployed on other routes to Neimenggu, including to regional capital Hohhot, Baotou and Ulanhot. Inner Mongolia thus confirms its role as an operational test ground for the ARJ21, with operations by Air China following those of regionally headquartered Genghis Khan Airlines (flying today four ARJ21s out of 25 ordered).

THE CHINA INDUSTRIAL MONITOR 06/30/2020

Triple delivery to major airlines for ARJ21

COMAC (Commercial Aircraft Corp. of China) has delivered on the same day three ARJ21s to CEAH (China Eastern Air Holding), CNAH (China National Aviation Holding) and CSAH (China Southern Air Holding). Whereas the plane for CEAH wore the livery of its newly established and dedicated subsidiary OTT (One Two Three Airlines – please see The China Industrial Monitor Issue 26, 02/28/2020), those for CNAH and CSAH wore colours of core companies Air China and China Southern Airlines. COMAC indicated that each of the airlines would receive three ARJ21s in 2020.

ANALYSIS > **Support display**

The tripe delivery mirored the « Majors » simultaneous triple order (for 35 units each) that boosted the ARJ21's orderbook in 2019 (please see The China Industrial Monitor Issue 17, 09/15/2019). Support to the program through the difficult post-covid 19 context translates in the fact that, of only 16 airliners delivered new to Chinese airlines from April to June (both included), eight were ARJ21s (with, besides the three already evoked, three going to Chengdu Airlines, one to Genghis Kahn Airlines, and one to CSAH undirect subsidiary Jiangxi Air).

The China Industrial Monitor 05/31/2020

Commercial service for Jiangxi Air's ARJ21

Four months after its delivery (please see The China Industrial Monitor Issue 25, 01/30/2020), the first COMAC (Commercial Aircraft Corp. of China) ARJ21 of Jiangxi Air has entered operation. After a ceremonial passenger flight on the 300 kilometers from Jinggangshan (its christening town) to Nanchang (both in Jiangxi), the airliner has entered commercial operations on the 700 kilometers Nanchang – Shanghai Pudong route.

Analysis > Comparison ordeal

The step is important for the ARJ21 program, as, after Chengdu Airlines – an « in-house » customer (controled by COMAC) – and Genghis Khan Airlines – which order was closely linked to obtaining an operation license from the CAAC (Civil Aviation Administration of China) –, Jiangxi Air is the first « classical » airline to operate the model, receiving it as part of an order passed by China Southern Airlines, its undirect mother-company (through direct parent Xiamen Air). Behind the doors, it may prove a difficult step for the ARJ21, that will have to stand comparison for economic performance (although on a different capacity segment) with the archi-trialed B737-800s Jiangxi Air has been operating since its establishment.

The China Industrial Monitor 05/15/2020

25th ARJ21 delivered to airline

COMAC (Commercial Aircraft Corp. of China) has delivered to Genghis Khan Airlines the fourth ARJ21 regional jet to join the fleet of the Neimenggu-based airline, and the 25th unit of the model to enter commercial service. Whereas the previous ARJ21 delivered to Chengdu Airlines was one of only two aircrafts delivered new to Chinese airlines in April (the other being an Airbus A320neo for Loong Air), the Genghis Kahn unit was the only new plane delivery for the first half of May.

Analysis > Priority treatment

Although proceding at slow rate, the very fact ARJ21s are the only planes delivered to Chinese airlines today reflects priority given by COMAC and the government. The pioneer program of COMAC, that made its first flight in 2008 and suffered protracted develoment, follows deployment plans that are immune from market considerations freezing other planemakers deliveries today.

The China Industrial Monitor 04/15/2020

COMAC CDC construction progress

Construction of the main structure of COMAC (Commercial Aircraft Corp. of China) CDC (Completion and Delivery Center) has begun in Nanchang (Jiangxi). The 245,000 m2 facility (of which 46,000 m2 constructed), integrating 11 plane parking spaces, is scheduled to enter operations this year, as announced when launched in 2019 (please see The China Industrial Monitor Issue 11, 04/30/2019).

Analysis > Tailored on ARJ21 developments

Whereas the facility was indicated on that occasion as apt to handle both ARJ21 and C919 models, first phase of the CDC appears clearly tailored on development of the ARJ21 program. Its announced 30 aircrafts yearly capacity is based on 2020 ARJ21 production objective, following opening of the model's second FAL (Final Assembly Line – please see The China Industrial Monitor Issues 28 and 27, 03/31 and 03/15/2020).

THE CHINA INDUSTRIAL MONITOR 03/31/2020

30 + 30 planned for ARJ21 in 2020

During coordination talks with its main provider AVIC (Aviation Industry Corp. of China), COMAC (Commercial Aircraft Corp. of China) subsidiary SAMC (Shanghai Aircraft Manufacturing Co) has mentioned its 2020 deliveries objective to be for 30 ARJ21 regional jets. On the same occasion, the Shanghai-based assembler indicated it expects to have received components for 30 more units at year end.

ANALYSIS > Progressive rate acceleration

At the same time the 2020 deliveries figure anticipates progressive operation of the model's recently opened, second FAL (Final Assembly Line – please see The China Industrial Monitor Issue 27, 03/15/2020), the figure or an equal number of planes to be on the assembly lines at the opening of 2021, suggests an important rise in production rate next year, to concretize the 142 confirmed orders book for the ARJ21 (discounting 24 planes already delivered).

THE CHINA INDUSTRIAL MONITOR 03/15/2020

Second FAL for ARJ21 operating

The first ARJ21 regional jet assembled in COMAC (Commercial Aircraft Corp. of China) subsidiary SAMC (Shanghai Aircraft Manufacturing Co)'s second FAL (Final Assembly Line), has made its first flight, two weeks after the first FAL came back to work (please see The China Industrial Monitor Issue 26, 02/28/2020). The new production line is located next to Shanghai Pudong Aircraft, 50 kilometers SouthEast of SAMC's original location in Shanghai's Baoshan Ditrict.

ANALYSIS > Room for growth

Construction of COMAC's second FAL, achieved in 2019, has been motivated by new production rates aimed at for the ARJ21, and by lack of space at the initial facility. Whereas the Baoshan site can store up to six ARJ21s, its tooling permits production of only 15 aircrafts per year. The new Pudong FAL has yearly capacity for 30 regional jets, and room for settling of a second line if necessary. The new site, close to both Pudong International Airport and the Yangze river, is also to be home for the future FALs of the C919 and CR929 programs.

THE CHINA INDUSTRIAL MONITOR 02/28/2020

China Eastern unveils new airline dedicated to national models

CEAH (China Eastern Air Holdings), the mother company of China Eastern Airlines, has unveiled a new airline named One Two Three Airlines (OTT). It is operated by its One Two Three Aviation Co subsidiary, the new name taken in 2019 by its former Eastern Business Aviation Co, operator of its business jets fleet. OTT, that gained operating rights for scheduled services in 2019, headquartered in Shanghai Hongqiao aiport, will be dedicated to « commercial operation of a new generation of domestic civil aircraft », with the ARJ21 and C919 models of COMAC as the core components of its fleet aiming at domestic services.

Analysis > Isolation of financial uncertainty effects

CEAH is to play an important role as launch customer of the C919 airliner (of which it has 20 on order), and more immediatly as one of the first operators of the ARJ21 regional jet, after the 2019 order that engaged it for 35 units (just as the two other major national airline groups – please see The China Industrial Monitor Issue 17, 09/15/2019). Choice by China Eastern to establish a dedicated airline for these models, whereas competitor China Southern has decided to introduce the ARJ21 in the fleet of one of its operating subsidiaries (Jiangxi Air – please see The China Industrial Monitor Issue 25, 01/30/2020), seems explainable by the fact that, of the three « Majors », CEAH is the one with the least developed subsidiaries network. Whereas China Southern, as well as Air China, can contain effects of economic uncertainties linked to the ARJ21 introduction, by delegating its operation to small size subsidiaries, CEAH will not want to take the risk of destabilizing one of the three established passenger airlines it controls (China Eastern and Shanghai Airlines based in Shanghai, and China United Airlines in Beijing). OTT will permit it to isolate operating costs of the new, unproven national models it is dedicated to.

The China Industrial Monitor 01/30/2020

Jiangxi Air becomes third ARJ21 operating airline

COMAC has delivered its first ARJ21 regional jet to Jiangxi Air. The Nanchang-based airline, until then operating a fleet of 10 Boeing B737s, will become the third airline to operate the ARJ21, as Urumqi Air's plans for deployment of the model appear to have been delayed.

Analysis > National and regional contexts

Whereas Jiangxi Air, a 60% subsidiary of Xiamen Air, itself part of CSAH (China Southern Airlines Holdings), is to receive five ARJ21s as part of an order for 35 by China Southern group (please see The China Industrial Monitor Issue 17, 09/15/2019), its apperance among the ARJ21's first operators is also due to support to regional developments linked to the program. The Jiangxi Province government is the other shareholder (with 40% of capital) of Jiangxi Air, and the province has benefited in 2019 from successive settlings by COMAC of a CDC (Completion and Delivery Center – please see The China Industrial Monitor Issue 11, 04/30/2019) and a cabin design center (please see The China Industrial Monitor Issue 21, 11/15/2019) in the frame of the ARJ21 program.

The China Industrial Monitor 09/15/2019

ARJ21 orderbook boosted

Air China, China Eastern Airlines and China Southern Airlines, the three « Major », centrally-controled Chinese airlines, have signed firm orders for 35 units each of the ARJ21 regional jet manufactured by COMAC (Commercial Aircraft Corp. of China). This coordinated boost brings firm oders for the model from 75 to 180, ensuring at least four years of activity to its assembly line, with deliveries to these three new clients planned between 2020 and 2024.

Analysis > Unhealthy commercial symptom

The fact the « Majors » have been called on, shows the ARJ21 has not convinced the Chinese regional airlines it was tailored for, despite promotion efforts (please see The China Industrial Monitor Issue 16bis, Summer 2019). With the exception of Genghis Khan Airlines, which order (for 25 ARJ21s plus 25 options) undoubtedly played a role in obtaining its operation license from the CAAC (Civil Aviation Administration of China) in 2018, the other regional airlines, which shareholders are submitted to heavy financial pressure, have certainly been wary of the regional jet economic performance. The perfect match between the three Majors orders, presented as intending to explore the potential of feeder services for their trunk lines, clearly shows a compromise has been reached – so that if the ARJ21 proves a money-loser, it will not impact the accounts of one of the three giants more than those of its two main competitors.

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The Aerospace section of *The China Industrial Monitor* covers :

Commercial Aviation

> Airliners Manufacturing

The China Industrial Monitor 12/15/2019

New assembly line for C919 central body validated

AVIC (Aviation Industry Corp. of China) subsidiary AVIC Xian Aircraft has indicated validation of the new digital assembly line deployed in 2019 for manufacturing of the central section of the fuselage of the C919 model of COMAC (Commercial Aircraft Corp. of China). The new line, that was used for completion of the central body of the (yet to fly) sixth and last of the prototypes (please see The China Industrial Monitor Issue 12, 05/15/2019), permits positioning and adjustment of the elements for assembly.

Analysis > Main supplier preparing for mass production

Coming after that of a new assembly line for wings (please see The China Industrial Monitor Issue 22, 11/30/2019), this validation for the other main component produced by AVIC Xian Aircraft, confirms preparation by the main supplier of the program, for mass production of the C919, officially scheduled for 2021.

> Components

The China Industrial Monitor 04/15/2020

SPDS for MA700 delivered

AVIC subsidiary SAE (Shanghai Aviation Electric Co) has delivered to the other group's subsidiary XAC (AVIC Xian Aircraft Co) the SPDS (Secondary Power Distribution System) of the MA700 regional transport twin-turboprop. Resulting from a contract signed between both parties in 2014, the MA700's SPDS is presented as the first Solid State Power distribution system developed domestically for use in civilian aerospace in China.

Analysis > Race to first flight on

Following complete assembly of the static tests-dedicated first unit (please see The China Industrial Monitor Issue 28, 03/31/2020), delivery of the control unit for all electricity-powered systems on the plane confirms progress of the late-on-schedule regional transport program. Integration challenges will still have to be overcome for first flight to take place before end of 2020, as now announced.

> Materials

The China Industrial Monitor 01/30/2020

COMAC focuses on composites

COMAC (Commercial Aircraft Corp. of China) has signed an agreement with China Building Materials Group (CNBM) for the common development and application of composite materials for large civil aircraft. On the same week, COMAC Composite Materials Center (established in 2018 to monitor that specific question) has signed MOUs (Memorandum of Undestanding) with 12 (undisclosed) domestic suppliers of composite materials. The MOUs call for pre-selection cooperation on the development of composite elements for the C919 airliner tail, more specifically its horizontal empennage.

Analysis > **C919 evolution**

Whereas collaboration with materials conglomerate CNBM aims at long term plans, the initiative of COMAC Composite Materials Center shows immediate objectives linked to the C919 program evolution. Whereas launch objectives called for composite materials accounting for 20% of structural weight, the first test units reached a proportion around 12%, leaving room for progress even before more ambitious goals are envisaged.

> Related Technologies

The China Industrial Monitor 05/15/2020

Modification tool for MA700 program

The First Aircraft Design and Research Institute has developed for its mother company, AVIC (Aviation Industry Corp. of China) subsidiary AVIC Xian Aircraft Corp. (XAC), a collaborative development system dedicated to the MA700 twin turboprop regional airliner. The three dimensional collaborative design tool aims at quick integration of modifications to the model.

Analysis > **Delays focus**

The system has found application with modifications resulting from static tests of the first unit assembled and delivered in March (please see The China Industrial Monitor Issue 28, 03/31/2020), that have translated in flat tail modifications. The system takes all its importance from the delays already suffered by the MA700 program, and its objective for first flight before end of 2020.

> Corporate Organization

The China Industrial Monitor 04/30/2020

AVIC streamlines COMAC supply chain

AVIC (Aviation Industry Corp. of China) subsidiary AVIC International Supply Chain Technology Co has officially launched its Regional Cargo Transportation system, on occasion of opening of its Chengdu Delivery Center in Sichuan. The system aims at transforming point-to-point Special

Transport Operations in regular mainline and distribution flows. Chengdu's delivery center is the second opened, after that of Xian (Shaanxi). The system is aimed at supplying of COMAC by these two providers of major parts for its airliners, as operations of the Chengdu and Xian subsidiaries of AVIC International Supply Chain Technology are coordinated by AVIC Lingang International Logistics Co, its main unit in Shanghai.


©AVIC

Analysis > Reason behind reorganization

Rationalization (and important economies attached) of the supply chain for COMAC's programs, was one of the main objectives and reasons for establishment, in 2019, of AVIC International Supply Chain Technology Co, that corresponded to inner resources coordination (please see The China Industrial Monitor Issue 12, 05/15/2019).

> MRO (Maintenance, Repair & Overhaul)

The China Industrial Monitor 05/30/2019

First multi-site certification for MRO

The CAAC (Civil Aviation Administration of China) has delivered its first multi-unit MRO (Maintenance, Repair & Overhaul) certification, to AMECO (Aircraft Maintenance and Engineering Co). The 13 branches of the Beijing-based MRO subsidiary of Air China group, are now covered by the same certificate, instead of having each to apply to local representation of the CAAC for their certification.


©AMECO

Analysis > Pilot case for other operators

The CAAC considers the multi-certification process not only simplifies procedures for MRO companies, but also solves cross-regional management problems, and betters their qualification through unified management. It has designated AMECO as a pilot case that should extend to other MRO operators in China, noticeably those linked to China Eastern, China Southern and Hainan Airlines groups.

> Related Operators

The China Industrial Monitor 03/15/2020

HNA under public umbrella


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Expected public takeover of HNA Group (please see The China Industrial Monitor Issue 26, 02/28/2020) has concretized with formation by Hainan province government of a joint working group co-managing the conglomerate. Headed by the chairman of Hainan Development Holdings, the financial arm of the island province, the working group includes, as deputy heads, representatives of the CAAC (Civil Aviation Administration of China) Central and Southern branch, and of the CDB (China Development Bank). This shows as its double objective continuation of the group's airlines operations, and disposal of its assets.

Analysis > Uncertain future for regional airlines

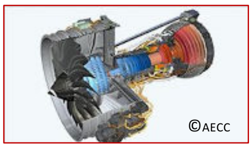
First decisions announced after the working group's establishment suggest Hainan government will retain control of Hainan Airlines, operating some 230 airliners and headquartered in the province.

Bold medium-term plans, for it to add 40 international destinations from Haikou and Sanya airports, have thus been announced as part of efforts to consolidate Hainan's tourism. The question remains open for the 12 other airlines owned or operationally controled by HNA Group, operating a cumulated fleet of some 420 airliners. Whereas some of them could see continuation of a trend initiated in 2018, in which local governments become majority shareholders (please see The China Industrial Monitor Issue 23, 12/15/2019 – « Logistics » section), unconfirmed rumours have evoked CNAH (China National Aviation Holding Co) and CEAH (China Eastern Air Holding Co), the mother companies of Air China and China Eastern Airlines, as potential buyers for some airlines.

Engines

The China Industrial Monitor 09/30/2019

AECC and Ansteel on strategic cooperation


©AECC

AECC (Aero Engine Corp. of China) and Ansteel Group Corp. have signed a strategic cooperation agreement. The conglomerate in charge of China's aero engines development and the Liaoning-based steelmaker plan cooperation that will focus on technological R&D (Research & Development) and providing, but that could extend to capital cooperation.

Analysis > Task sharing for central steelmakers

The agreement confirms previous talks that pointed in that direction (please see The China Industrial Monitor Issue 15, 06/15/2019). It also confirms task sharing between the two Central SASAC-controled steelmakers in the Aviation sector, as Ansteel's cooperation with AECC will mirror that of Baowu (Baowu Steel Group) with COMAC, that includes capital holding since establishment of the airliners builder in 2008.

General Aviation

The China Industrial Monitor 04/30/2020

Modernized LE500s for AVIC flight school


©AVIC

AVIC Tongfei North China Aircraft Industry Co, the Shijiazhuang (Hebei) headquartered unit of AVIC subsidiary CAIGA (China Aviation Industry General Aircraft Co), has delivered three modernized LE500 trainers to Zhuhai AVIC Flight School, the unit of AVIC General Aircraft Co based (operationnally) in Wuzhou, in Guangxi. The planes are the first of six ordered, with integration of an ADS-B (Automatic Dependance Surveillance-Broadcast) system as their main modification.

Analysis > ADS-B to support marketing effort

Integration of ADS-B is a major card CAIGA will try to play on, as the system, compensating insufficient radar covering of low airspace, is at the core of plans for development of General Aviation in China. By introducing the equiped planes on the market through « in-house » (also AVIC subsidiary) client Zhuhai AVIC Flight School, CAIGA hopes to better prospects of its LE500 in the country's flying schools – where it stands far beyond competitors Cessna and Diamond Aircraft.

Helicopters

The China Industrial Monitor 11/30/2019

Helicopter Design Research Institute promoted

AVICOPTER (AVIC Helicopter Co) subsidiary AVIC Helicopter Design Research Institute, based in Jingdezhen (Jiangxi), has been elevated by the MIIT (Ministry of Industry and Information Technology) to the status of national industrial design center. It is the only unit of AVICOPTER to have been granted that status.

Analysis > National and regional interpretations

The new rank given to the Institute can be considered as part of a clearing of role-sharing inside AVICOPTER, with Jingdezhen being confirmed in its R&D role, whereas group headquarters (and final assembly for civilian products) have been located in Tianjin Autonomous Municipality. It can also be considered from a regional perspective, as part of the Beijing-supported strategy for aerospace industry development in Jiangxi.

Space Industry

The China Industrial Monitor 05/15/2020

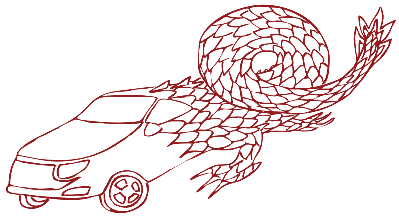
First operational Hongyun units launched

As announced earlier (please see The China Industrial Monitor Issue 29, 04/15/2020), CASIC (China Aerospace Science and Industry Corp.) subsidiary ExPace (Rocket Technology) has launched the two first operational units (after a test unit launched in December 2018) of its Hongyun constellation, dedicated to coverage of low internet-access regions.

Analysis > In-house payload for Kuaizhou

The launch from Jiuquan Space Center (in Neimenggu) was made using a Kuaizhou (KZ) 1A light launcher, thus concretizing the complementarity between launcher and payload developed by CASIC, and supporting development of its new industrial base in Wuhan (Hubei – please see The China Industrial Monitor Issue 30, 04/30/2020).

AUTOMOTIVE



Stay updated on developments in **Programs, Corporate environment*, Projects, Technologies** and **Strategic plans** in China's Automotive industry.

***** EXEMPLE : Evolution of China's EV (Electric Vehicles) start-ups :

THE CHINA INDUSTRIAL MONITOR 07/15/2020

Anhui credit lines opened for NIO

Two months after signing a cooperation agreement, including local settlement of its China headquarters, with the government of Hefei (please see The China Industrial Monitor Issue 31, 05/15/2020), NIO has announced benefiting from cumulated opening of 1.5 billion USD of credit lines, by the Anhui branches of six of the country's major banks (ICBC – Industrial and Commercial Bank of China, CCB – China Construction Bank, BOC – Bank of China, ABC – Agricultural Bank of China, Industrial Bank and China Merchants Bank).

ANALYSIS > Turning point

The announcement, coming some days after the first cash injections by Hefei SASAC controled investment firms (that will hold 24% of the new NIO China entity, versus 76% going to NIO for injecting its core business and assets), confirms the decisive nature of NIO's association to the capital of Anhui province. One year after the start-up EV (Electric Vehicles) maker appeared in a perilous financial situation (please see The China Industrial Monitor Issue 10, 04/15/2019), it has secured both stable shareholders and banking support, to go through a restructuring period aggravated by the effects of the covid 19 crisis.

Byton suspended untill 2021

Nanjing (Jiangsu) headquartered EV start-up Byton has announced suspension of all operations for at least six months, starting 1st of July. The firm explained capital shortage forced it to deep reorganization.

ANALYSIS > First victim of segment restructuring ?

Byton may be the first victim of an unavoidable restructuring in the EV segment, accelerated by the covid 19 crisis. The firm established in 2017, initially as FMC (Future Mobility Corp.), benefited from initial support from Internet group Tencent and Taiwan electronics giant Foxconn. Its huge ambitions, for a 300,000 vehicles yearly capacity plant in Nanjing, appeared to gain further support when FAW Group entered capital in 2018. But the partnership did not translate efficiently, as shown by the fact that the Nanjing plant did not obtain production license. Although Byton started trial production of its first model in october 2019, it had no time to reach the market before being hit by the crisis.

THE CHINA INDUSTRIAL MONITOR 06/30/2020 – **Evergrande takes 100% of NEVS**

Evergrande Group has acquired full control of Sweden-based (but industrially settled in China) NEVS, bringing to 100% the share of capital held by its Evergrande Health Industry Group subsidiary.

Analysis > Full control for big ambitions

After acquiring 51% of NEVS begining of 2019 (please see The China Industrial Monitor Issue 5, 01/30/2019), Evergrande had risen its share to 83%, at the same time it built a full EV production chain around NEVS (please see The China Industrial Monitor Issue 21, 11/15/2019). The latest move shows the real estate giant intends to be fully master of its ambitious EV plans.

The China Industrial Monitor 05/31/2020

Xpeng obtains production license

Xpeng Motor has obtained from the MIIT (Ministry of Industry and Information Technology) a production license for vehicles. The license will permit the Guangzhou-headquartered start-up to produce its EVs (Electric Vehicles) in its own plant in Zhaoqing, also in Guangdong.

Analysis > Double validation

The decision validates the strategy of Xpeng, that bought earlier this year near-bankrupt Foday Automotive Co, holder of a production license (please see The China Industrial Monitor Issue 28, 03/31/2020). Acceptance by the MIIT of transfer of the license, also indicates central authorities considered potential and advancement of Xpeng as sufficient to justify its own production. Xpeng is the second EV start-up to benefit from that measure this year, after Bordrin New Energy Vehicle Co (please see The China Industrial Monitor Issue 25, 01/30/2020).

The China Industrial Monitor 05/15/2020

NIO Hefei landing confirmed

NIO has signed contracts confirming previous framework agreement with the municipal authorities of Hefei, the capital of Anhui province (please see The China Industrial Monitor issue 26, 02/28/2020). Investors led by municipal SASAC-controled Hefei Construction Investment Holding Co will invest 1 billion USD in exchange for 24% of a new NIO China entity, with the remaining 76% held by NIO, injecting its core business and assets. As part of the deal, the EV (Electric Vehicles) maker will transfer its China headquarters to Hefei, adding to the R&D, production and sales facilities agreed in the initial talks.

Analysis > Local plans

Whereas NIO Global headquarters will remain located in Shanghai, the deal, securing its delicate financial situation, closely associates the EV maker to the capital of Anhui. It states that NIO will prolong contract manufacturing with Hefei-based and Anhui SASAC-controled JAC (Jianghuai Auto Co), dedicating yearly capacity for 100,000 vehicles, whereas construction of a second plant may be undertaken in the future.

The China Industrial Monitor 03/31/2020

Henan takes the wheel at Reech

Provincial SASAC controled Henan State Investment Management Co has acquired control, and 60% of capital, of EV (Electric Vehicles) start-up Reech Auto. The 2016-established auto developer, that had agreed with Changan Auto for contract manufacturing in 2019 (please see The China Industrial Monitor Issue 13, 05/30/2019), has still not entered mass production. Whereas its initial plans for an own plant in Jiangxi appear abandonned, it is too early to know what will happen with the Changan agreement, aiming at production in Chongqing.

ANALYSIS > **Latest in a series**

Reech is the latest EV start-up to come under control of a regional government, after NIO, Aiways and Singulato Motors, since 2019 (please see The China Industrial Monitor Issue 26, 02/28/2020). Provinces clearly try to play on the financial difficulties of EV newcomers to have innovative firms settling on their territory, and bringing participation in a high tech and high potential market – the four agreements evoked have involved inland and relatively poor provinces. The bet is nevertheless uncertain ; in the case of Reech specifically, doubts have been raised by the fact most of the start-up's founding team is said to have left the firm before the Henan financing.

Xpeng buys access to own production

Xpeng Motor EV start-up has acquired Foshan (Guangdong) based Foday Automotive Co, that was on the verge of bankruptcy. The deal appears mainly aimed at the auto manufacturing license of Foday, that will permit Xpeng to enter negotiations with the MIIT (Ministry of Industry and Information Technologies), to get agreement to produce on its own facilities.

ANALYSIS > **Guangdong plans**

Xpeng is one of the only Chinese EV start-ups to have entered commercial production (with some 16,000 cars delivered in 2019), but has no own-production license. Its actual manufacturing is made in Zhengzhou (Henan) by FAW group subsidiary Haima, under a contract signed in 2017. Although Xpeng said the Foday acquisition would not change its relationship with Haima, it may be a protective move against potential difficulties of the latter. It also appears aimed at gaining a production license for the 100,000 vehicles yearly capacity plant that Guangzhou (Guangdong) based Xpeng has built in 2019 in Zhaoqing, in Guangdong also, that has entered trial production.

THE CHINA INDUSTRIAL MONITOR 02/28/2020

NIO on the road to Hefei

NIO has signed a framework agreement with the municipal government of Hefei that could lead to a 1.4 billion USD investment in the EV (Electric Vehicles) maker by the capital of Anhui province. The agreement confirms failure of talks between NIO and GAC (Guangzhou Auto Corp.) that appeared uncertain because of hardly reconcilable disagreements (please see The China Industrial Monitor Issue 25, 01/30/2020). They have also denied rumours that had surfaced since, about investment by other leading automaker Geely.

ANALYSIS > **Regional governements / start-ups pattern confirmed ?**

Whereas the project has to be confirmed – as NIO had signed in 2019 a comparable agreement with a Beijing SASAC controled firm, that seems to have gone nowhere (please see The China Industrial Monitor Issue 13, 05/30/2019) –, it would come as a logical step further on the cooperation between NIO and Hefei-based, and Anhui SASAC-controled, JAC (Jianghuai Auto Co), contract manufacturer for the former. Whereas NIO corporate headquarters would remain in Shanghai, the agreement calls for all major R&D, production and sales capacities of the firm to be located in Hefei. The Anhui capital would thus follow a pattern in which local governments bet on start-up EV makers to put themselves on the map of that promising segment. This pattern has already led in 2019 to comparable agreements between Jiangxi province government and EV maker Aiways, and between

Tongling municipality, also in Anhui, and EV maker Singulato Motors (please see The China Industrial Monitor Issues 14 and 4, 06/15/2019 and 01/15/2019).

THE CHINA INDUSTRIAL MONITOR 01/30/2020

Bordrin gets production license

Bordrin New Energy Vehicle Co has obtained an EV production license from the MIIT (Ministry of Industry and Information Technology). The Nanjing (Jiangsu) based start-up, established in 2016, thus joins the ranks of automakers with ability to produce vehicles in their own plants, without having to partner with an established manufacturer.

ANALYSIS > Status validation

The news show that Bordrin has solved the problem linked to the dissolution of Xiali Auto, the FAW Group subsidiary with which it had established a joint-venture (JV) in 2019, with the aim of obtaining a production license (please see The China Industrial Monitor Issue 23, 12/15/2019). Whereas documents reveal Bordrin had taken the precaution of investing 80% of the capital of the JV, decision of the MIIT to grant it a license despite the disappearing of its partner, indicates that authorities considered potential and advancement of Bordrin as sufficient to justify its establishment among the country's EV makers.

THE CHINA INDUSTRIAL MONITOR 11/15/2019

Evergrande grand plans progress

Evergrande Group has successively announced further investment by its Evergrande Health Industry Group subsidiary in NEVS, the center piece of its development in EVs (Electric Vehicles) ; and partnership with no less than 60 Chinese and foreign manufacturers to support this development. Whereas Evergrande Health will bring its share of NEVS from 51% to 83% of capital through cash and assets injection, its mother company has signed agreements with providers covering both auto parts (including Bosch, Continental, Magna and Michelin) and production equipment (including ABB and Kuka).

ANALYSIS > Guangzhou signal

On the second occasion, Evergrande Group evoked an EV development budget for the period to 2021 cumulating 6.5 billion USD (that seems to include the 3 billion USD of cash and assets injection in NEVS). The multi-providers announcement event was held in Guangzhou, appearing as a sign that neighbouring Shenzhen-based Evergrande intends to give a full role to the Guangdong capital, some weeks after settling its global R&D headquarters in Shanghai (please see The China Industrial Monitor Issue 20, 10/31/2019).

THE CHINA INDUSTRIAL MONITOR 10/15/2019

Bordrin in JV with FAW Xiali

FAW group subsidiary FAW Xiali Automobile and EV start-up Bordrin have established a joint-venture (JV) settled in Tianjin, with 80% of capital held by Bordrin, and 20% by FAW Xiali.

ANALYSIS > Converging needs

Creation of the JV confirms preliminary agreement signed in May (please see The China Industrial Monitor Issue 12, 05/15/2019). The JV will give Bordrin (established in 2016, and with no production license) access to Xiali's production lines – that will need to meet growing EV share of their production to avoid financial penalties, in the EV quota system to be deployed untill 2023 (please seee The China Industrial Monitor Issue 16, 07/15/2019).

...

The Automotive section of *The China Industrial Monitor* covers :

Autonomous Vehicles

The China Industrial Monitor 09/15/2019

SAIC in Shanghai Port demo

SAIC (Shanghai Auto Industry Corp.) has partnered with China Mobile (China Mobile Communications Corp.) and SPIG (Shanghai International Port Group) on an Intelligent Heavy Duty Truck (IHDT) demo project linked to both Yangshan Port Terminal 4, the world's first fully automatic port terminal, and Lingang autonomous driving test zone (please see The China Industrial Monitor Issue 3, 12/15/2018).

Analysis > **Multi-fonctions shopwindow**

The project, that has already carried full tests, aims at 5G (5th generation of mobile communications)-based L4 (Level 4) autonomous driving, for in-port automatic logistics (claiming 15 seconds for container loading or unloading), as well as for linking the two test zones (32 kilometers apart). Involving tasks including centimeter positioning, interaction with automated port equipment, precision parking, queue driving and route planning, it will serve as a multi-technologies demo for SAIC.

Corporate Restructuring

The China Industrial Monitor 01/15/2020

Baoneng buys former Changan-PSA joint-venture

Real estate group Baoneng has been confirmed as buyer of the assets of CAPSA (Changan Auto PSA), the joint-venture between Changan Auto and French group PSA which ending had been announced earlier (please see The China Industrial Monitor Issue 21, 11/15/2019). Baoneng has bought the shares of both former partners (that held 50% each), acquiring full capital of the firm.

Analysis > **Audacious bet**

Two years after buying former Chery group subsidiary Qoros, Baoneng confirms its intentions to enter the automotive market. Although former CAPSA brings it yearly production capacities for 200,000 vehicles through its Shenzhen (Guangdong) plant, the bet appears audacious as CAPSA, after selling only 4,000 cars in 2018, fell to just over 2,000 on the eleven first months of 2019.

ELECTRIC VEHICLES

THE CHINA INDUSTRIAL MONITOR 10/15/2019

CATL and BJEV on first CTP technology application

CATL (Contemporary Amperex Technology Co Ltd) and BAIC (Beijing Auto Industry Corp.) subsidiary BJEV (Beijing Electric Vehicle Co), have unveiled the first vehicle equiped with CTP (Cell-to-Pack) battery, some weeks after the leading battery maker presented this new technology. CTP integrates directly EV (Electric Vehicle) battery cells in a pack, instead of integrating cells in modules, themselves integrated in the pack. Results are optimization of space and energy density, with CATL claiming 15 to 20% gain on the latter.

ANALYSIS > Techno race front runners

Coming some months after CATL mentionned progress on cells energy density (please see The China Industrial Monitor Issue 9, 03/29/2019), this parallel innovation confirms determination to stay on top of the technological race. The same can be said of BJEV for vehicles, as this pioneer association with CATL follows efforts to take a leading position in Autonomous Vehicles technologies (please see The China Industrial Monitor Issue 6, 02/15/2019).

REGIONAL DEVELOPMENTS

THE CHINA INDUSTRIAL MONITOR 01/30/2020 - **License production for new Cowin**

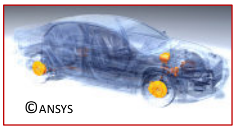
Yibin Cowin Automobile Co has obtained a production license for both thermal engine cars and EVs (Electric Vehicles) from the MIIT (Ministry of Industry and Information Technology). Its first models are to enter the market as soon as the first quarter of 2020.

ANALYSIS > Central approval for Sichuan project

The decision marks central authorities approval of the development plans of Yibin municipality in Sichuan (200 kilometers South of regional capital Chengdu). Cowin, established as an independant brand of Chery group in 2015, was acquired by two investment firms controled by the Sichuan municipality in 2017, when the Wuhu (Anhui)-based automaker was faced with financial difficulties (that also led it to selling its other Qoros subsidiary at the same time). Headquarters and production facilities of former Wuhu Cowin Automobile Co have been transfered to Yibin in 2018-2019, and the MIIT license permits the new firm to enter the market.

SMART MANUFACTURING

THE CHINA INDUSTRIAL MONITOR 10/31/2019 - **« Digital Twins » for FAW production**



CASIC (China Aerospace Science and Industry Corp.) subsidiary CASICloud-Tech Co has collaborated with FAW group to provide it an advanced visualization system for the plants of its Hongqi subsidiary. The « Digital Twins » system permits monitoring of the entire production process.

ANALYSIS > Hongqi intra-group leadership confirmed

Hongqi is confirmed as leader, inside FAW group, not only in vehicle quality, but also for manufacturing processes intended at development of own-brand products.

Smart Vehicles

The China Industrial Monitor 05/15/2020

Huawei on multiple partnership

Telecom equipment maker Huawei has launched a « 5G-enabled automotive ecosystem » in which it associates to 18 partners for cooperation on 5G (5th Generation of mobile communications) technologies applied to Smart Driving, intelligent connectivity and electrification. The partners include units of auto « Majors » SAIC (Shanghai Auto, with Roewe, Wuling and Naveco), FAW (with Hongqi, Besturn and Jiefang), DFM (Dongfeng Motor), Changan Auto and GAC (Guangzhou Auto), as well as second-rank automakers with strong involvement in EVs (Electric Vehicles), including BYD, GreatWall Motor, Chery, JAC (Jianghuai Auto) and bus maker Yutong.

Analysis > Leadership and diffusion role

With the initiative, Huawei affirms leadership, after cumulation of bilateral agreements with most of the partners involved. It also plays a strategic role for accelerating technology diffusion. Partners in the « ecosystem » are engaged in a race to technology, illustrated by the fact that SAIC Roewe presented, on the same week, what it claims to be the Word's first « full-cabin interactive 5G production car », based on Huawei hardware.

Special Vehicles

The China Industrial Monitor 09/15/2019

Geely invests in Volocopter

Geely group has become a minority shareholder of German air taxi developer Volocopter on occasion of capital raising. The two firms also pre-agreed on settling of a joint-venture to introduce Volocopter's products on the Chinese market.

Analysis > Parallel interests

The latest move by Geely confirms two parallel interests of the group. First one is the flying car segment, that Geely already entered in 2017, through acquisition of US start-up Terrafugia. The second is cooperation with Germany's Daimler group, which was already a shareholder of Volocopter and participated in the new fund raising. This new occasion to cooperate comes after Geely acquired 9.7% of Daimler's capital in 2018, and both groups agreed on development of the Smart auto brand in China (please see The China Industrial Monitor Issue 10, 04/15/2019).

Thermal Vehicles

The China Industrial Monitor 04/15/2020 - **Lincoln comes to China**

The Changan-Ford joint-venture (JV) has added Lincoln brand vehicles to those produced at its Chongqing base. The cars are the first of the high-end brand of the US group to be built in China.

Analysis > Overcrowded segment

Despite difficult context, Ford and its partner have decided to raise the chances of Lincoln on a Chinese high-end market in which all main competitors – domestic (led by FAW's Hongqi brand), US (led by SAIC-GM JV's Cadillac production) and from other countries (noticeably with JVs by all German concerned groups) – have already settled production capacities.

Trucks

The China Industrial Monitor 05/15/2020

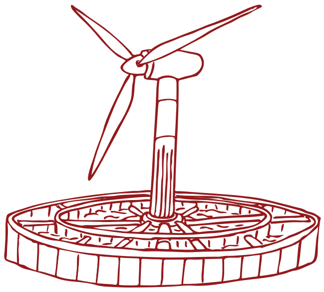
Mass production L3 truck announced for 2021

DFM (Dongfeng Motor) subsidiary DFCV (Dongfeng Commercial Vehicles) and Shanghai-based specialized start-up Inceptio Technology (established in 2018) have completed design of a L3 (Level 3) Autonomous Truck for mass production. The model aims at commercialization in 2021.

Analysis > **Smart Logistics potential**

Parallely to demo efforts on L4 (High Automation) in enclosed spaces (mainly ports), L3 (Conditional Automation) technology, appliable to Smart Logistics in open spaces, is an important potential market for truck makers. Whereas Dongfeng appears in a leading position through the latest development, Inceptio is also engaged in cooperations with competitors BAIC Beiqi-Foton and Sinotruk.

ENERGY



Stay updated on developments in **Programs, Corporate environment, Projects*, Technologies** and **Strategic plans** in China's Energy industry.

* EXEMPLE : UHV (Ultra-High Voltage) development in China :

THE CHINA INDUSTRIAL MONITOR 06/15/2020

Qinghai-Henan UHV line completed

SGCC (State Grid Corp. of China) has completed the UHV (Ultra High Voltage) line between Qinghai and Henan provinces. With construction launched in 2018 (please see The China Industrial Monitor Issue 1, 11/15/2018), the 1,590 kilometers, 800 Kv (Kilovolts) line links Hainan prefecture, in Qinghai, to Zhumadian, 200 kilometers South of Henan capital Zhengzhou, through Gansu and Shaanxi provinces.

ANALYSIS > Ultra Green High Voltage

The 23rd UHV line built by SGCC in China is the first to be mainly dedicated to PV (PhotoVoltaïc) electricity transport. Its point of origin in Qinghai is Longyangxia PV farm, China's largest at 850 MW (MegaWatt) capacity ; and other smaller PV farms in Gansu connect on its way.

THE CHINA INDUSTRIAL MONITOR 05/31/2020

Kunliulong UHV line completed

CSG (China Southern Power Grid Corp.) has completed the Kunliulong UHV (Ultra High Voltage) line. Running from North of Kunming, in Yunnan, to Longmen district in the prefecture of Huizhou in Guangdong (and across Guizhou and Guangxi, where the Liuzhou converter station is settled), the 800 Kv (Kilovolt), 1,450 kilometers line, is for 54% of its path located in mountainous territory, and has an average altitude of 1,300 meters.

ANALYSIS > Hydropower transmission

Whereas other major grid operator SGCC (State Grid Corp. of China) has recently accelerated its UHV program (please see The China Industrial Monitor Issue 29, 04/15/2020), Kunliulong is the main project on that field currently developed by CSG. It settles in the frame of both West-East (producing to consuming regions) power transmission and « green » energy development, linking the 10.2 MW (MegaWatt) Wudongde hydropower station (North of Kunming), due to enter operation this year, with electricity main consumer Guangdong.

THE CHINA INDUSTRIAL MONITOR 04/15/2020

SGCC accelerates on UHV

SGCC (State Grid Corp. of China) has announced raising of its 2020 budget dedicated to UHV (Ultra-High Voltage) lines construction, to 25 billion USD (181 billion RMB). Besides the North Shaanxi – Hubei line which construction was engaged in February (please seee The China Industrial Monitor Issue 27, 03/15/2020), SGCC will accelerate work on five other lines under construction, for them to be completed in 2020-2021 ; and preparatory and approval work for seven new UHV lines, with the 2021-2023 period as completion objective.

ANALYSIS > **Grid nature evolution**

The UHV network will benefit from authorities' support, as one of the infrastructure construction sectors still available to attenuate the economic aftershock of the covid-19 crisis. But the wave of new projects announced by SGCC covers an evolution in the nature of the grid. Whereas half of projects announced for the 2020-2021 period (with links between Shaanxi and Hubei, Sichuan and Jiangxi, and Qinghai and Henan) are still links between major power production and consumption regions – as were nearly all of the 22 previous UHV lines built by the group –, the other half are so-called Exchange lines, prolonging the first category toward other consumption zones (with projects inside Hebei and Henan, and between Hebei and Shandong). And this new Exchange category accounts for five of the UHV projects planned for the 2021-2023 period (with links between Hubei and Henan, Hubei and Jiangxi, Hunan and Jiangxi, Hunan and Henan, and intra-Hubei), against two in the production-to-consumption transfer category (with links between the Sichuan-Yunnan region and Jiangsu and Zhejiang).

THE CHINA INDUSTRIAL MONITOR 01/15/2020

SGCC on World first carbon fiber composite UHV line

SGCC (State Grid Corp. of China)'s Eastern Neimenggu subsidiary has announced operating the World's first carbon fiber composite wire based UHV (Ultra High Voltage) line. The 15 km line is the first segment of the 1,000 KV (KiloVolts) line due to link China Datang Corp.'s Xilinhot 1,320 MW (MegaWatt) coal-fired power station, in Neimenggu, to Shandong province.

ANALYSIS > **Alternative exploration**

SGCC is working on carbon fiber based UHV lines to explore the possibility of large-scale use of that solution which characteristics include lighter weight, better conductivity, and higher resistance to high temperatures and corrosion when compared with metal core wires.

THE CHINA INDUSTRIAL MONITOR 10/15/2019 - **First UHV GIL for SGCC**

SGCC (State Grid Corp. of China) has put in operation its first major UHV (Ultra High Voltage) GIL (Gas-Insulated Line). The 1,000 KV (KiloVolts), 35 kilometers line, running from Nantong to Suzhou (both in Jiangsu), is part of a UHV line being built between Huainan (in Jiangxi) and Shanghai.

ANALYSIS > **Problems solver**

GIL, as an alternative to aerial UHV lines, permits to avoid the problems linked to the latter in crossing of densely populated areas as well as waterways. Both difficulties arose in the section opened, that crosses the Yangze river.

THE CHINA INDUSTRIAL MONITOR 06/30/2019

5G plus drone system used for UHV line inspection

The Zhejiang branch of SGCC (State Grid Corp. of China) has begun deploying an intelligent inspection system for Ultra High Voltage (UHV) lines. The system relies on 5G (5th Generation of mobile communication) linked to an UAV (Unmanned

Aerial Vehicle), and a 3D visualization platform receiving HD (High Definition) images in real time thanks to the 5G connection.

Analysis > Finding a way in difficult surroundings

SGCC Zhejiang has been developing the system for inspection of narrow manœuvre environments, in which manned inspection (from ground or air) is difficult. The system has been employed in settlings presenting only 300 meter wide line path and 55 meter adjacent wires spacing.

The China Industrial Monitor 01/15/2019

New record UHV line operating

SGCC (State Grid Corp. of China) has started operation of the UHV (Ultra High Voltage) line it has built between Zhundong (50 kilometers north of Urumqi in Changji, Xinjiang) and Xuancheng (70 kilometers south-east of Wuhu, in Anhui). The line, 3,290 kilometers long, sets a new record for voltage transmitted, at 1,100 KV (KiloVolts).

Analysis > New transmission capacity standard tested

The 19th UHV line to be operated in China has 10% higher transmission capacity than its predecessors (standing at 800 or 1,000 KV). Depending on its operational results, it may establish a new standard for further West-East links between China's main enery resources-rich and main energy-consuming regions.

The China Industrial Monitor 11/30/2018

China's first UHV undersea cable laid down

A 500 KiloVolt cable has been laid down by SGCC (State Grid Corp. of China) between Ningbo (Zhejiang) and Dapengshan island. The 18 kilometer cable is the first section of the Ultra High Voltage (UHV) link to be established between continental Zhejiang and Zhoushan, and the first submarine UHV line to be deployed in China.

Analysis > Complete national solution developed

The crosslinked polyethylene (XPLE) cable deployed, is the first UHV undersea cable developed in China, by Hengtong Optic-Electric cable manufacturer. The ship used for laying cable has been developed with involvement of the Zhejiang branch of SGCC. A complete national solution is thus tested for undersea UHV cables, that may be used for later applications such as offshore wind power transmission.

Tibet UHV grid operating

SGCC (State Grid Corp. of China) has completed the first UHV (Ultra High Voltage) network in Xizang (Tibet). Its 2,738 kilometers of lines raise voltage of the Autonomous Region's grid from 220 KiloVolt to 500 KiloVolt. The network is associated to several record features, including the world's highest UHV tower, at an altitude of 5,295 meters, and the world's highest UHV substation, at 4,300 meters. Elevation between lowest (2,200 meters) and highest (5,300 meters) points of the grid is 3,100 meters.

Analysis > **Key support element for railway project**

Besides bettering electricity providing to scarcely populated Xizang, this grid is a key support element for the Sichuan-Xizang railway project. Scheduled to open between 2021 and 2025, its 1,600 kilometers line, or at least major part of it, is to be electrified.

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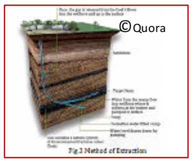
The Energy section of *The China Industrial Monitor* covers :

Coal

The China Industrial Monitor 03/31/2020

Breakthrough for deep CBM



Jincheng Coal Industry Group subsidiary Lanyan Coalbed Methane Group has announced breakthrough in exploitation methods for deep CBM (Coal Bed Methane). The firm has proceded to successfull extraction of deep CBM in Jincheng's Qinshui coalfield, in Shanxi.

Analysis > **Huge perspectives**

If confirmed, the announcement would open huge new perspectives to CBM in Shanxi. Whereas exploitation is limited untill today to CBM located at depths under 1,000 meters, Lanyan now claims capacity to extract 1,500 meters deep gas. Deep CBM resources for the sole Qinshui coalfield are estimated around 500 billion m3.

Electricity Transmission

The China Industrial Monitor 04/30/2020

Powerfull shunt reactor developed by XD Group

China XD Group (XiDian) has developed a 1,000 kV (kiloVolt) capacity shunt reactor, the most powerfull produced in the country. The first three units are ready for deployment on the Zhangbei-Xiongan UHV line under construction by SGCC (State Grid Corp. of China), between Zhangjiakou and Xiongan New Area in Hebei.

Analysis > **Test for longer perspectives**

Whereas first deployment will be on the country's shortest UHV line (with 220 kilometers), successfull testing could open other perspectives to XD's latest product in the frame of SGCC's important UHV plans (please see The China Industrial Monitor Issue 29, 04/15/2020).

Electricity Storage

The China Industrial Monitor 05/15/2020

Li-ion ESS plant close to operation

The plant of the Shanghai Electric Guoxuan New Energy Technology Co joint-venture (JV) between SEC (Shanghai Electric Corp., with 51% of capital) and Hefei Guoxuan High Tech Power Energy Co (49%) is close to operation, announced for June. Dedicated to li-ion ESSs (Energy Storage Systems) for industrial or residential use, the plant, located in Nantong (Jiangsu), will have an initial yearly production capacity of 5 GWh (GigaWatt hours).

Analysis > Diversifications synergy

Operation of the JV established in 2017 will concretize diversification strategy through association engaged by its two shareholders. Whereas electrical equipment specialist SEC will gain access to upstream market, Hefei Guoxuan, China's number 3 li-ion batteries producer, will strengthen diversification from the EV (Electric Vehicles) segment that accounts for most of its sales.

Hydropower

The China Industrial Monitor 02/28/2020 - Pumped storage power deployment

SGCC (State Grid Corp. of China) subsidiary State Grid Xinyuan Co, dedicated to construction and operation of pumped storage power plants, has confirmed that the Fengning station, in Hebei, is on track with its schedule, and should be finished, and begin operation, in 2020. On the same week, it launched construction of an other project, Yuanqu pumped storage power station in Shanxi.

Analysis > Renewables load balancing tool

Fengning power plant, some 200 kilometers North of Beijing, is to be the World's highest capacity pumped storage power station, with some 3,600 MW capacity when fully completed. It is part of a general policy of pumped storage capacities construction deployed by SGCC for renewable energies load balancing, of which Yuanqu, with 1,200 MW planned capacity, is the latest exemple.

Nuclear Power

The China Industrial Monitor 01/30/2020 - Priority confirmed for HTGCR

CNNC (China National Nuclear Corp.) has confirmed 2020 will see focus on industrialization of its High-Temperature Gas-Cooled Reactors (HTGCR) program, as was suggested by recent involvement of its CNNP subsidiary on that issue (please see The China Industrial Monitor Issue 23, 12/15/2019). Beyond first phase linked to commercial operation of its Shidaowan (Shandong) 200 MW (MegaWatt) HTGCR, development work on a 600 MW model has been evoked.

Analysis > Parallel longer-term program progress

At the same time it confirmed focus on its short-term priority new program, CNNC has announced civil construction work had ended on its Xiapu (Fujian) reactor, opening the way to installation phase. Xiapu is the first CFR600 (China Fast Reactor 600 MW) built by CNNC, and the country's first full-scale sodium-cooled fast neutron reactor, planned to enter operation in 2023.

Oil & Gas

The China Industrial Monitor 01/15/2020

Exploration and exploitation direct access opened to private and foreign firms

The MNR (Ministry of Natural Resources) has announced that, from May 1st 2020, oil and gas exploration and exploitation in China will be open to any firm registered in the country with assets above 300 million RMB (43 million USD) and qualified on technological ability criteria. The new rule will apply to private as well as public, and foreign-funded as well as national firms. Private and foreign firms will thus have direct access to the oil and gas exploration and exploitation market through public bidding or rights buying, instead of being constrained to associate with State-owned rights holders through JV (joint-venture) or PSC (Production Sharing Contract).

Analysis > **Financing difficult-acces resources exploration**

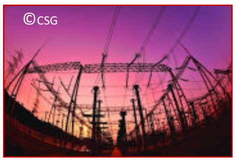
The decision, that ends de facto monopoly of the three State-owned « Majors » (CNPC – China National Petroleum Corp., Sinopec – China Petrochemical Corp. and CNOOC – China National Offshore Oil Corp.) plus regional player Shaanxi Yanchang Petroleum Corp., is motivated by the will to attract capital for exploration and mining of difficult-access resources in the country. Whereas all « easy » fields have been tapped by the four players evoked above, financial risk-taking is needed to explore « hidden » resources.

Smart Energy

The China Industrial Monitor Summer 2019

Digital grid research institute for CSG

CSG (China Southern Power Grid Corp.) has established in Guangzhou (Guangdong) a Digital Grid Research Institute. Operating as a new subsidiary of the group, the Institute will undertake innovation research and development on cloud computing, big data, IoT (Internet of Things) and AI (Artificial Intelligence), to support building of a smart grid by CSG.



Analysis > **Central role in Southern Smart Grid plan**

CSG Digital Grid Research Institute is to play a very concrete role, as it will be the central support structure for the development plan for establishment of a smart grid by CSG on the territory it covers (Guangdong, Guangxi, Guizhou, Yunnan and Hainan). The plan, issued in 2018, calls for begining of Internet connection of upstream and downstream parts of the energy chain as soon as 2020, and basic realization of the Southern digital network by 2025.

Solar Power

The China Industrial Monitor 04/15/2020

GCL-SI unveils huge modules project

GCL-SI (GCL Systems Integration) has signed an agreement for settling in Hefei (Anhui) of a 60 MW (MegaWatt) yearly capacity PV (PhotoVoltaic) modules production base. Construction of first phase of the project, with 15 MW capacity, is to start this year.

Analysis > **Logical step but doubts**

Suzhou (Jiangsu)-headquartered GCL-SI is the solar panels manufacturing arm of GCL Group, that also oversees upstream and downstream subsidiaries – with Silicon wafers maker GCL-Poly Energy, and renewable power projects developer GCL New Energy. Changing dimension in the central modules manufacturing position held by CGL-SI makes sense in that context ; but size of the announced project raises doubts. Its 60 GW capacity objective would imply tenfold growth of GCL-SI production capacity ; and would represent 50% of the World's PV modules production in 2019.

Thermal Power

The China Industrial Monitor 07/15/2019

Record waste-incineration based power station operating

Phase II of Laogang Renewable Energy Centre, built by PowerChina (Power Construction Corp. of China) in Shanghai, has entered operation. The complex becomes the World's most powerfull power station based on waste incineration.

Analysis > Garbage-to-power converter

The center has seen doubling of its capacity, with eight incineration lines now cumulating ability to burn 6,000 tons of garbage daily. Heath produced is used to run three, 50 MW (Megawatt) each, turbines. Yearly production capacity of the station is expected at 900 million KWh (KiloWatt Hours). The station is considered by Chinese authorities as a model case for urban waste management.

Wind Power

The China Industrial Monitor 09/15/2019

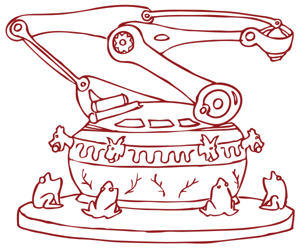
Huaneng establishes Offshore Wind Power R&D center

China Huaneng Group has established a R&D (Research & Development) center dedicated to Offshore Wind Power in Yancheng, in Jiangsu. The center will be dedicated to all aspects, from turbine design and manufacturing to wind farm construction, operation and maintenance. It is based on group subsidiary Huaneng Clean Energy Technology Research Institute Co, but associates other firms, including SGCC (State Grid Corp. of China) subsidiary NARI Group, and turbine manufacturers Goldwind, CSIC Haizhuang and Envision.

Analysis > Jiangsu agreement concretization

Creation of the Yancheng R&D center is the first step in concretization of the major agreement signed by Huaneng with Jiangsu governement earlier in the year (please see The China Industrial Monitor Issue 13, 05/30/2019). The agreement calls for installation of a full base supporting manufacturing, installation and operation of 10 GW Offshore Wind Power capacity off the province, through 23 billion USD planned total investment.

OTHER INDUSTRIES



Stay updated on developments in **Programs, Corporate environment, Projects, Technologies*** and **Strategic plans** in China's Other Industries.

***** EXEMPLE : Semiconductors development in China :

THE CHINA INDUSTRIAL MONITOR 07/15/2020

CEC opens new analog semiconductors plant in Shanghai

CEC (China Electronics Corp.) subsidiary GTA Semiconductor Co has opened a new plant dedicated to analog integrated circuits in Shanghai's Lingang district. The complex, integrating both production and R&D facilities, is presented by CEC as an important step in its plans for establishing in Shanghai China's largest analog semiconductor manufacturing base.

ANALYSIS > Major change planned

GTA Semiconductor, with main sales in Automotive, and strong ambitions in the EV (Electric Vehicles) segment, is heir to the Shanghai Philips Semiconductor joint-venture established in 1988, and successor ASMC (Advanced Semiconductor Manufacturing Corp.). The main difference with these predecessors is that whereas those were only founders, CEC intends to develop GTA as both a designer and manufacturer

THE CHINA INDUSTRIAL MONITOR 06/30/2020

Ion implanter delivered by CETC

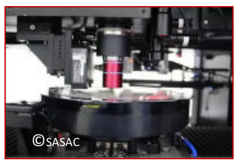
CETC (China Electronics Technology Corp.) has completed what it says to be the first medium-beam ion implanter developed in China. The device was delivered to an unspecified *« large integrated circuit production line in Beijing »*.

ANALYSIS > Race to equipment

With the measures taken by Washington for controling deliveries to suppliers of some Chinese firms, semiconductor production equipment has become a high priority for establishing alternative chains in China. CETC plays a leading role in that autonomization strategy.

THE CHINA INDUSTRIAL MONITOR 05/31/2020

CEC on laser wafer-cutting machine



CEC (China Electronics Corp.) claims to have developed the first laser wafer cutting machine to be conceived in China. The high precision crystalline silicon cutting tool has been developed by CEC subsidiary Zhengzhou RTIT (Rail Transit Information Technology) Research Institute and private firm Henan General Intelligent Equipment Co, also headquartered in Zhengzhou (Henan).

ANALYSIS > **Puzzling partnership**

Whereas clearly part of strategic efforts to develop core technologies for semiconductors manufacturing, the achievement is set in a quite unusual frame because of actors involved. While RTIT was established by CEC in 2017, Henan General Intelligent Equipment was registered in november 2019, as a subsidiary of small-size private firm DRFU Automation Technology Co, based in Suzhou (Jiangsu). It is difficult to estimate which real means are behind this apparently successfull public-private partnership, that has developed in record time in the capital of Henan.

Coordinated financing for SMIC

Shanghai-based chips « founder » SMIC (Semiconductor Manufacturing International Co) has received cumulated investment of 2.25 billion USD from the CICIIF (China Integrated Circuit Industry Investment Fund) and local replica Shanghai Integrated Circuit Fund. The financing came just after US sanctions threats against chips providers to telecom equipment maker Huawei became effective.

ANALYSIS > **Strategic status confirmed**

The move confirms strategic importance given to SMIC, for establishing a domestic alternative for semiconductors contract manufacturing (please see The China Industrial Monitor Issue 31, 05/15/2020). The CICIIF was established in 2014 jointly by the MIIT (Ministry of Industry and Information Technology) and the MOF (Ministry of Finance), to support development of the national semiconductors industry.

THE CHINA INDUSTRIAL MONITOR 05/15/2020

Manœuvres around SMIC

On the same week Huawei group's HiSilicon subsidiary confirmed it had contracted it for mass production of one of its semiconductor series for first time, SMIC (Semiconductor Manufacturing International Co), China's main chips « founder », has announced partial listing on the Shanghai Stock Exchange, aiming at raising over 3 billion USD financing.

ANALYSIS > **National founder required**

The two news appear closely related, and preparing for a domestic solution for manufacturing of Huawei's chips. HiSilicon, a fabless developer, was prompted to transfer manufacturing that was undertaken by Taiwanese founder TSMC (Taiwan Semiconductor Manufacturing Co) after the latter was targeted by sanctions threats from the US administration. But SMIC masters only 12 nm (nanometer) chips technology, whereas HiSilicon's more advanced series require 7 nm technology. Part of the financing to be raised is thus to go to R&D, to comfort SMIC as a real domestic alternative to founders that will not be in position to withstand US action.

THE CHINA INDUSTRIAL MONITOR 04/30/2020

BYD restructures semiconductor activity

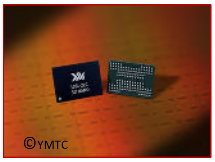
BYD group has restructured its semiconductor activity. Former BYD Microelectronics Co subsidiary has been renamed BYD Semiconductor Co, and has acquired related activities of three other group subsidiaries based in Guangdong and Zhejiang.

Analysis > Objectives broadened

The move has been presented as preparing opening to strategic minority investors to raise new financing. While keeping Automotive products as its core activity, BYD Semiconductor intends to develop products for other industries, including components for power devices, intelligent controlers, smart sensors and optoelectronic products.

The China Industrial Monitor 04/15/2020

Tsinghua Unigroup claims major breakthrough in 3D NAND



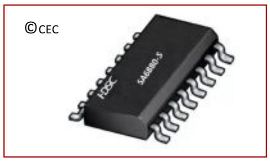
Wuhan (Hubei)-based Tsinghua Unigroup subsidiary YMTC (Yangze Memory Technologies Co), has announced success in development of 128 layer 3D NAND chips. The device is to be tested on consumer products in a first phase, but aims at enterprises' servers and data centers as its ultimate targets.

Analysis > 3D NAND priority confirmed

The achievement was presented by the group as a decisive step in *« the company's key push to reduce heavy reliance on foreign semiconductor industry »*. Following first mass production of (64 layer) 3D NAND chips in 2019 (please see The China Industrial Monitor Issue 17, 09/15/2019), it confirms priority given by Tsinghua Unigroup to big budget beneficiary 3D NAND program (please see The China Industrial Monitor Issue 6, 02/15/2019).

The China Industrial Monitor 03/31/2020

First auto-grade domestic Isolated IGBT Gate Driver



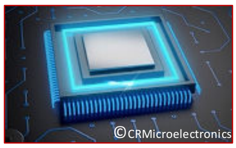
CEC subsidiary Huada Semiconductor Co (HDSC) has announced release of the first domestically developed Isolated IGBT (Insulated Gate Bipolar Transistor) Gate Driver usable for auto industry. The device has been been tested successfully by several EV (Electric Vehicles) manufacturers.

Analysis > Automotive priority

EVs industry is the main target of the new chip developed by HDSC, for power transmission. Other potential applications include electricity transport and distribution, and photovoltaic power generation.

The China Industrial Monitor 03/15/2020

Fundings for semiconductor initiatives



CR (China Resources Holding Co) subsidiary China Resources Microelectronics, headquartered in Wuxi (Jiangsu), has proceded to an IPO (Initial Public Offering) on the Shanghai stockmarket. Capital raised is to support development of semiconductors and sensors. On a smaller scale, other centrally controled financial holding CITIC Ltd, has associated with TV and display producer Konka Group, based in Shenzhen (Guangdong), to establish an investment fund dedicated to support of the latter's upstream diversification in semiconductors.

Analysis > Parallel mobilization

These latest moves confirm general mobilization on the development of the strategic semiconductors industry. Firms engaged multiply, parallely to the main course set by major actors Tsinghua Unigroup, CETC (China Electronics and Technology Corp.) and CEC (China Electronics Corp.).

The China Industrial Monitor 09/30/2019

Tsinghua Unigroup launches World chase for DRAM talents

Some days after settling its new DRAM (Dynamic Random Access Memory) dedicated subsidiary, Guoxin Integrated Circuit, in Chongqing Autonomous Municipality (please see The China Industrial Monitor Issue 17, 09/15/2019), Tsinghua Unigroup has launched a Worldwide recruitment campaign to staff it. Offers are made to experts in all fields of DRAM design, device, process, process technology, product engineering, and production.

Analysis > Ambitions and weaknesses revealed

At the same time it reveals the project has important financial support, this open campaign unveils weakness of the new subsidiary of Tsinghua Unigroup. It will remain an empty shell unless international talents are recruited, to compensate for the lack of national experience on the DRAM segment.

The China Industrial Monitor 09/15/2019

Major developments for Tsinghua Unigroup

Tsinghua Unigroup has signed an agreement with Chongqing government, for settlement in the Autonomous Municipality of its new subsidiary Guoxin Integrated Circuit Co. The latter will be dedicated to DRAMs (Dynamic Random Access Memory), and comes two months after announcement of a new group division for that segment (please see The China Industrial Monitor Issue 16, 07/15/2019). The central base for Tsinghua Unigroup DRAM business will include headquarters, Research & Development facilities, plants, and a dedicated Fund for financial support. On the same week, Tsinghua Unigroup announced its Yangze River Storage Technology Co subsidiary, based in Wuhan (Hubei), has entered mass production of 3NAND chips, confirming progress that had been made earlier by its other involved Nanjing base (please see The China Industrial Monitor Issue 6, 02/15/2019). Finally for the same period, Tsinghua Unigroup has signed an agreement with Minhang district authorities, in Shanghai Autonomous Municipality, for settlement of an AI (Artificial Intelligence) base, including cloud core nods and a support platform.

Analysis > Front line role reaffirmed

Some weeks after indicating Tsinghua Holdings would remain in direct control (please see The China Industrial Monitor Issue 16bis, Summer 2019), Unigroup confirms it is to play a decisive role, on scale with the huge financing it has mobilized, in the high-priority development of the country's semiconductors industry. Parallel HR moves have confirmed this determination (please see Appointments section of that issue).

The China Industrial Monitor 06/30/2019

Gree begins using own-developed chips

Zhuhai (Guangdong) based air conditioner manufacturer Gree Electric Appliances, has announced it has begun using self-developed semiconductors in part of its production.

Analysis > Dependance reduction policy

Gree established a subsidiary dedicated to development and production of tailored chips in 2018. The group follows the path to development of national semiconductor capacities to reduce dependance on foreign providers. Whereas its first application is on air conditioners, its core production, it should also serve its projects in other sectors including robotics.

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The Other Industries section of *The China Industrial Monitor* covers :

Chemicals

The China Industrial Monitor 09/30/2019

Methanol synthesis tower developed

CNCEC (China National Chemical Engineering Co) subsidiary China Chengda Engineering Co, headquartered in Chengdu (Sichuan), has developed a methanol synthesis tower. The 512 tons equipment is to be the center piece of a 2.2 million tons methanol yearly capacity plant.

Analysis > **CTL segment potential**

Chengda Engineering has been involved in methanol synthesis installations on Chinese soil since 2007. The corporation indicated it has been working on development of an own technological solution since 2011. The accomplishment is important because methanol synthesis is at the heart of the CTL (Coal to Liquids) segment, with important potential in China, and depended on US technology for that central element.

Electronics

The China Industrial Monitor 11/15/2019

Agreement on new materials development

CETC (China Electronics and Technology Group Corp.) and GRINM (General Research Institute for Nonferrous Metals) have signed a strategic agreement. Both parties will collaborate on the development of new materials dedicated to use in the electronics industry.

Analysis > **Strategic in-house capacity for CETC**

Both Central SASAC controled groups will deepen integration of their development efforts. As a specialist in nonferrous metals, with regional application centers dedicated to optoelectronics, Beijing-based GRINM will provide CETC with in-house capacity for new materials development, as well as specialized small batches production.

Infrastructure

The China Industrial Monitor 04/15/2019

New member joins central SASAC ranks

The central SASAC (State-owned Assets Supervision and Administration Commission) has integrated a new firm under its monitoring, bringing to 97 the number of enterprises directly managed by the national governement. China Aneng Construction Group, specialized in dam and associated infrastructure construction, has been transfered from control by the PAP (People's Armed Police), of which it was part since its creation in 1989.

ANALYSIS > « China Construction Corp. » completed

Whereas China Aneng Construction Group, employing 3,000 persons, is a small player when compared to other SASAC-controled construction giants, it has begun involvement in Overseas projects in SouthEast Asia. Ending of its unusual status will permit its full insertion in the OBOR (One Belt, One Road) strategy.

MATERIALS

THE CHINA INDUSTRIAL MONITOR 04/15/2020

Joint lab for CR ChemMat and RITS

CR (China Resources Holdings Co) subsidiary CR ChemMat (China Resources Chemical Materials Technology Holdings Co) has opened in Changzhou (Jiangsu) a Joint Research Institute with RITS (Research Institute of Tsinghua University in Shenzhen), dedicated to High Performance Thermoplastic Composites. The joint lab aims at development of superior mechanical properties and high recyclability materials, targeting primarily Electronics industry, Transportation, Energy, and Building Materials.

ANALYSIS > First in a series ?

The new lab is the first concretization of an agreement signed in 2019 between CR's China Resources Science and Technology Research Institute and RITS. It should lead to establishment of other Joint Research Institutes dedicated to the R&D needs of other branches of CR, including in Energy production and Electronics.

METALS

THE CHINA INDUSTRIAL MONITOR 06/15/2019

Strategic acquisition for Baowu Steel

Central SASAC controled, Shanghai-based, Baowu Steel has reached agreement with Anhui-based Maanshan Steel (MaaSteel) for acquiring 51% of its capital. China's leading steelmaker will thus acquire the country's number 7. Maasteel produced 19 million tons of steel in 2018, that will add to Baowu's 67 million tons. Beyond production capacity, the main interest of Maasteel lies in its value-added products, including the only ability among Chinese steelmakers to produce high-speed train wheels.

ANALYSIS > Regional opposition overcome

Maasteel's acquisition marks determination of central authorities to accelerate restructuring of China's too fragmented steel sector. Baowu (and its predecessor Baosteel) had been trying for ten years to acquire Anhui's main steelmaker, but prevented by the regional government's opposition. Announcement of the deal signals Beijing has stepped in to impose national restructuring over regional policy.

Robotics

The China Industrial Monitor 04/15/2020

Midea takes controling stake in Hiconics

Foshan (Guangdong)-based Midea Group has acquired 18.7% of capital, and 23.7% of voting rights, in Beijing-headquartered Hiconics Eco-energy Technology Co. The appliances making group thus becomes the main shareholder of Hiconics, specialized in industrial automation control, with VFD (Variable Frequency Drive) and servo control systems as its main products.

Analysis > Central role strengthened

Midea follows on its path toward a strong diversification in the robotics field. The group became a central player in China's efforts on that field in 2016, through acquisition of germany's Kuka, followed by several complementary Overseas and domestic acquisitions.

Rolling Stock

The China Industrial Monitor 05/30/2019

High Speed Maglev unveiled

Shandong-based CRRC (China Railway Rolling Stock Corp.) subsidiary CRRC Qingdao Sifang has rolled out the testing prototype of a Maglev (magnetic levitation) train aiming at 600 km/h operating speed. The 2 vehicle, 53 meter long, protype is due to test key technologies and core components.

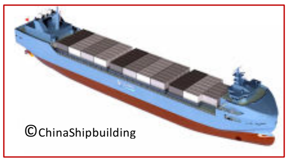
Analysis > Not yet at quay

Despite the hype around its presentation, the project still has several major steps to pass. Its testing center will be achieved later in 2019, and a 5 vehicle engineering prototype is scheduled for roll out in 2020. Whereas CRRC Zhuzhou Locomotive's medium-speed (200 km/h), intercity model, aims at commercial operation in 2020 (please see The China Industrial Monitor Issue 8, 03/15/2019), CRRC Qingdao Sifang's high-speed, long-range model, will need some more time to reach operability.

Shipbuilding

The China Industrial Monitor 05/15/2020

Intelligent containership unveiled



China Shipbuilding Group subsidiary SMERI (Shanghai Marine Equipment Research Institute) and Smart Navigation Qingdao Technology Co, established by the Water Transport Research Institute of the MOT (Ministry of Transport), have unveiled the project of an intelligent containership. The Zhifei, 107 meters long, with 300 TEUs (Twenty feet Equivalent Units) payload, is to have unmanned, satellite-based navigation capacities. Powered by an hybrid engine associating a generator and power battery, it is planned for test sailing in 2021.

Analysis > Next step for smartships

Developed from previous common work of SMERI and Smart Navigation, the Zhifei is part of efforts toward « smartships » identified among the priorities of the *Made in China 2025* plan. After a first generation of assisted navigation intelligent ship systems applied to large vessels (please see The China Industrial Monitor Issue 12, 05/15/2019), it is to be part of the development units for a second generation with autonomous capacities.

Smart Manufacturing

The China Industrial Monitor 05/15/2020

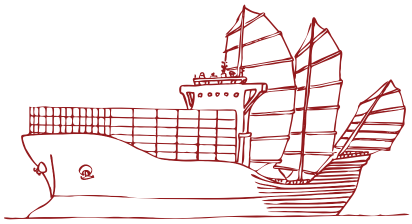
Pactera acquired by CEC

HNA Group has sold its HNA EcoTech Panorama subsidiary, owner of Pactera Technology International Ltd, to CEC (China Electronics Corp.), one of the two electronics conglomerates controled by Central SASAC. A 30,000 employees strong IT (Information Technology) consulting and outsourcing firm specializing on digital transformation and software development, Pactera was the result of merger between Chinese firms HiSoft (headquartered in Dalian, Liaoning) and VanceInfo (headquatered in Beijing) in 2012. It had been acquired by HNA in 2016 from US equity firm Blackstone Group.

Analysis > **Strategic deal**

Coming as part of the general deal between HNA and Chinese authorities, based on divestment from non-core businesses against financial support for the debt-ridden group, the sale of Pactera permits this major actor of the IT sector to strengthen one of the country's main electronics players, six months after the MIIT (Ministry of Industry and Information Technology) designated software engineering as a new national priority (please see The China Industrial Monitor Issue 16, 07/15/2019).

LOGISTICS & FINANCE

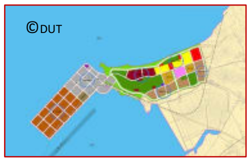


Stay updated on developments in **Programs, Corporate environment, Projects, Technologies** and **Strategic plans*** in China's Logistics & Finance.

* EXEMPLE : Ports development and organization in China :

THE CHINA INDUSTRIAL MONITOR 07/15/2020

China Merchants promotes Dalian Taiping Bay project



China Merchants Group (CMG) and the Liaoning government have jointly held an investment promotion conference focused on the Taiping Bay development zone, for enterprises from the Pearls River Delta area (Guandong-Hongkong). The event, following joint creation of China Merchants Taipingwan Development and Investment Co by CMG, Liaoning government and Dalian municipality, targeted innovative industrial investments in the development zone linked to the Taiping Bay Port. Halfway between Dalian and Yingkou on the Western coast of the Liaodong peninsula, the new infrastructure is scheduled for begining operations in 2021.

ANALYSIS > **Northeast « new Shekou » objective**

Involvement in the Taiping Bay project confirms central role given to Hongkong-based China Merchants by the Liaoning government. It comes as a step further after creation of Liaoning Ports Group, that brought Dalian and Yingkou ports under operational control of CMG (please see The China Industrial Monitor issue 1, 11/15/2018), and later transfer of control of Dandong port (please see The China Industrial Monitor issue 25, 01/30/2020). Designation of the Taiping Bay project as a « new Shekou » is a clear reference to the port-industry integration model developed by CMG in Shenzhen (Guangdong), that Liaoning authorities would like to see duplicated in the province.

THE CHINA INDUSTRIAL MONITOR 06/15/2020

Qinzhou – Tianjin line launched

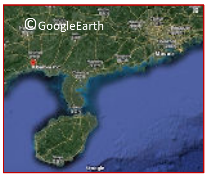
Beibu Gulf Port Group, operator of Qinzhou port in Guangxi, and Tianjin Port Group have launched the first direct service between the two platforms. Two 2,518 TEUs (Twenty feet Equivalent Units) ships have been dedicated to the new service, operated in six days.

ANALYSIS > **New port on the map**

The move confirms new importance suddenly gained by the untill now marginal port of Qinzhou. After China COSCO Shipping opened rail links from Chongqing to use it as an alternative to Yangze river transport disrupted during the covid-19 epidemics (please see The China Industrial Monitor Issue 28, 03/31/2020), the Guangxi port has seen huge trafic growth. The feedering line opened with China's main Northern gate may help it to settle definitely on the country's ports network.

The China Industrial Monitor 03/31/2020

Alternative sea access opened for SouthWest



China COSCO Shipping Corp. subsidiary COSCO Shipping Lines has begun promoting an alternative route for sea access for SouthWest China, because of Yangze water transport disruptions linked to the covid-19 epidemy. A rail link to the port of Qinzhou, in Guangxi, is operated as a substitute to water transport to Shanghai from Chongqing. The service also connects the Southern port with Kunming (Yunnan), Guiyang (Guizhou), Chengdu (Sichuan) and Lanzhou (Gansu).

Analysis > Lasting effect ?

Although Qinzhou is a marginal port, COSCO links it to Hongkong and Guangzhou ports through feedering services, so that it can be used as a relay for nearly any destination. The new route opened may last and have an important effect on the Guangxi port, as COSCO indicated it can also offer an alternative to lock congestion at the Three Gorges on the Yangze, on non-crisis periods.

The China Industrial Monitor 01/30/2020

Shanghai port in Ningbo port capital

On occasion of capital raising, SIPG (Shanghai International Port Group) has become a strategic investor in Ningbo Port Co. The Zhejiang port, that (when considering the Ningbo-Zhoushan complex) ranks World number 1 for bulk and World number 3 (Shanghai being number 1) for containers, will use funds raised for both iron ore and containers terminals developments.

Analysis > Two-ways affair

Framed in coordination efforts for the development of Yangze Delta logistics, the acquisition makes capital involvement between both major ports a two-ways affair. Zhejiang Harbour Investment and Operation Group, the mother company of Ningbo-Zhoushan Port Co (itself the controler of Ningbo Port Co) became a strategic investor in the SIPG subsidiary operating Yangshan deep-sea port in 2019 (please see The China Industrial Monitor Issue 7, 02/28/2019).

Dandong port under control of China Merchants

A court ruling has ordered transfer of Dandong port (on the border with North Korea) to Liaoning Port Group, controled by China Merchants Group (CMG). CMG thus now controls all major ports of Liaoning, with Dandong joining Dalian and Yingkou.

Analysis > Private failure bitter lesson for investors

The ruling comes as the conclusion of restructuring initiated in 2019 (please see The China Industrial Monitor Issue 10, 04/15/2019). Coming after the collapse of Rilin Group, that operated Dandong, it marks failure of one of the country's only seaport private control, and will leave bitter memories to investors. Dandong Port Co's total indebtment finally revealed to be close to 10 billion USD, and the restructuring plan gives creditors only 10 to 12% (depending on their status) of the money they lent to its former operator.

The China Industrial Monitor 09/30/2019

Fujian-Zhejiang ports cooperation agreed

Zhejiang Port Group and Xiamen Port Holding Group have signed a strategic cooperation agreement. It calls for development of communication systems, optimization of regional logistics, and parallel promotion of Ningbou-Zhoushan (Zhejiang) and Xiamen (Fujian) as regional sea trade hubs.

ANALYSIS > **From intra- to inter-provincial**

Although quite vague, the agreement reflects a will to rationalize ports economics that has translated in many intra-province reorganisations (the latest of which took place in Shandong – please see The China Industrial Monitor Issue 16bis, Summer 2019). This next step, of inter-provinces cooperation, has already translated in other plans, such as those for the Yangze Delta region (please see The China Industrial Monitor Issue 5, 01/30/2019).

SIPG acquires terminals in Jiangsu

SIPG (Shanghai International Port Group) has acquired, from China COSCO Shipping Corp. subsidiary COSCO Shipping Ports, control of container terminals in the Yangze river ports of Zhangjiagang (120 kilometers NorthWest of Shanghai), Yangzhou (250 kilometers NorthWest of Shanghai) and Nanjing (300 kilometers NorthWest of Shanghai), all in Jiangsu.

ANALYSIS > **Yangze Delta strategy**

Coming after recent cooperations between SIPG and COSCO on feeders operation, rail-sea operations, and links with much farther inland river ports in Anhui and Hubei (please see The China Industrial Monitor Issues 12, 9, 8 and 3), this new agreement between the Shanghai SASAC-controled port operator, and the Central SASAC-controled shipping group, is part of the strategy for integration of the Yangze river delta logistics, and consolidation of Shanghai's international shipping position.

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The Logistics & Finance section of *THE CHINA INDUSTRIAL MONITOR* covers :

AIR TRANSPORT

THE CHINA INDUSTRIAL MONITOR 05/15/2020

New airline launched in the midst of storm

A new all-cargo operator, Central Airlines, began operations on May 10, with first flight from its home-base of Zhengzhou (Henan) to Shenzhen (Guangdong). Other initial routes will link the capital of Henan to Wuxi (Jiangsu), Quanzhou (Fujian) and Haikou (Hainan). Central Airlines received both its operation certificate from the CAAC (Civil Aviation Administration of China) and its first plane (a Boeing B737-300F) in April.

ANALYSIS > **Modest start and ambitions**

The new operator, supported by the province's government, comes as a tool for comforting the position of Zhengzhou as a freight hub, and benefits from coherence with Central plans for the development of national air freight capacities. Although starting modestly, with a 27 years old B737 that belonged previously to Suparna Airlines, Central Airlines has plans for a 12 aircraft fleet in 2023, and 60 cargo planes by 2030.

Rail Transport

The China Industrial Monitor 05/15/2019 - **JV for rail-sea development in Shanghai**

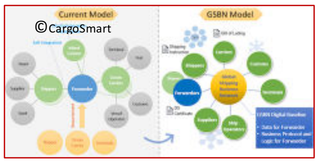
A joint-venture (JV) has been formed by SIPG (Shanghai International Port Group, holding 45% of capital), China COSCO Shipping Corp. (20%), and CRCT (China Railway Container Transport Co, the dedicated branch of CR – China Railway) and the National Railway Administration of the Ministry of Transport (the two latter cumulating 35% of shares). The new firm has built railway infrastructure in Shanghai Yangshan port, and will launch multimodal (rail-sea) services from the end of May.

Analysis > Room for growth

The new venture is motivated by the extremely low share of rail transport in the World's first container port trafic. In 2018, just 60,000 TEUs (Twenty feet Equivalent Units), out of the 42 million transiting through Shanghai, were brought to or from the port by rail. The JV has modest initial objectives, aiming at 80,000 TEUs trafic in 2019 and 200,000 TEUs in 2020. But it has stronger long term ambitions. It plans for a services network that will link Shanghai port, not only to its close intherland (services to Suzhou and Changzhou, both in Jiangsu and under 200 kilometers from Yangshan), but to much farther destinations including Zhengzhou (in Henan, 900 kilometers from Shanghai), Xian (in Shaanxi, 1,400 kilometers from Shanghai) and Chengdu (in Sichuan, 1,900 kilometers from Shanghai).

Sea Transport

The China Industrial Monitor 03/15/2020 - **GSBN gathers shareholders**



The GSBN (Global Shipping Business Network) open digital platform developed by China COSCO Shipping Corp. subsidiary CargoSmart, has reached shareholders agreement stage. The same nine signatories of a financing agreement in 2019 (please see The China Industrial Monitor Issue 16bis, Summer 2019), have confirmed their commitment as shareholders of the proposed GSBN.

Analysis > Chinese and global dimensions

The four shipowners and five port operators supporting the platform's development are Chinese for two of the former (COSCO Shipping Lines, and other COSCO subsidiary OOCL), and four of the latter (COSCO Shipping Ports, SIPG – Shanghai International Port Group, Port of Qingdao, and Hongkong's Hutchinson Ports). Association with other major, European ship operators CMA CGM and Hapag Lloyd, and with Singaporean port operator PSA International, gives full global reach to that initiative aiming to link all operators along the shipping chain, and to counter Danish shipowner Maersk's TradeLens (please see The China Industrial Monitor Issue 1, 11/15/2018)

Waterways Transport

The China Industrial Monitor 04/15/2020 - **Huge shiplock opens at Datengxia dam**

The shiplock of the Datengxia dam on the Qian river, in Guiping, in Guangxi Autonomous Region, has entered operation. The shipping infrastructure integrated in the Datengxia water conservation project is equiped with China's biggest miter gates at its lower exit – each 47.5 meters high and 20 meters wide, with a weight of 1,295 tons apiece.

ANALYSIS > **Guangxi Sea access**

The dam and shiplock associated raise capacity of ships operating on the Qian river from 300 to 3,000 tons, and yearly trafic capacity on the river (accounting for operating of the shiplock) from 13 million to 52 million tons. The main effect of the new infrastructure will be permiting access of 2,500 tons capacity ships up to Liuzhou (through the Qian and then Liu rivers), 400 kilometers from the sea. The inland Guangxi city will thus be put in relation, through the Liu, Qian, and then Xunjiang and Xi rivers, with the Pearls River Delta, in Guangdong. Coming after works to extend inland Guangdong access (please see The China Industrial Monitor Issue 22, 11/30/2019), it links the latter province's seaports to more inland parts of neighbouring Guangxi.

BANKING & FINANCE (related to Industry)

THE CHINA INDUSTRIAL MONITOR 04/15/2020

CDB loan fund for selected industries

The CDB (China Development Bank) has established a special loan fund of 35 billion USD (250 billion RMB) aimed at high quality development of manufacturing industry, and at both Key Enterprises, and small and medium firms involved in the selected sectors' industrial chain.

ANALYSIS > **Keeping *Made in China 2025* on track**

This post-covid 19 crisis special loan facility aims at avoiding paralysis of corporations involved in the country's strategic industrial plans. With Electronics and Telecom equipment (integrated circuits and new displays / 5G and optical communication equipment), Automotive (New Energy Vehicles), Aerospace (Large Aircraft), Rail (High Speed Rail rolling stock and infrastructure equipment), Robotics and Biomedicines, it lists as targets six of the 10 sectors (and subsectors) identified in the State Council's 2015-published *Made in China 2025* plan, adding AI (Artificial Intelligence) as a seventh targeted sector. The four *Made in China 2025* sectors not appearing (High-Tech Shipbuilding, Electricity Production and Transport equipment, Advanced Agricultural machinery and New Materials) probably appeared to benefit from sufficient short-term financing.

APPOINTMENTS

Stay updated on developments inside **China's Corporate headquarters*** and **Political environment**** decisive for industrial development.

* EXEMPLE : Appointments in the Oil & Gas sector :

THE CHINA INDUSTRIAL MONITOR 05/31/2020
ZHAO Dong has been appointed CPC deputy secretary of **Sinopec** (China Petrochemical Corp.).

ANALYSIS > ZHAO has been promoted from his position as CFO (Chief Financial Officer). Sinopec's new number 3 joined the group in 2016, after a career in other oil « Major » CNPC (China National Petroleum Corp.), where he was CFO of CNODC (CNPC Overseas Exploration and Development Co) subsidiary before holding the same position for the group.

THE CHINA INDUSTRIAL MONITOR 03/31/2020
HU Guangjie has been appointed general manager of **CNOOC** (China National Offshore Oil Corp.).

ANALYSIS > HU has been transfered from Sinopec (China Petrochemical Corp.), where he was general manager of the Exploration and Development Department. He made all his previous career in the other oil « Major », including as general manager of its NorthWest Oilfields branch.

XU Keqiang, who had been appointed to the same position in 2019 (please see The China Industrial Monitor Issue 22, 11/30/2019), remains with CNOOC, and takes the title of chief executive officer.

THE CHINA INDUSTRIAL MONITOR 03/15/2020
LI Fanrong has been appointed general manager of **CNPC** (China National Petroleum Corp.).

ANALYSIS > LI has been transfered from his position as deputy director of the NEA (National Energy Administration), under the NDRC (National Development and Reform Commission). He had previously spent 32 years in CNOOC (China National Offshore Oil Corp.), including as general manager of the Liuhua oilfield (associating CNOOC with foreign opearators Agip, Chevron and Texaco), general manager of CNOOC Shenzhen, then deputy general manager of the group from 2010 to 2016. His appointment, coming soon after transfer of DAI Houliang from Sinopec to chairmanship of CNPC (please see The China Industrial Monitor Issue 25, 01/30/2020), completes efforts to coordinate action of the three national oil « Majors ».

THE CHINA INDUSTRIAL MONITOR 01/30/2020
ZHANG Yuzhuo has been appointed chairman of **Sinopec** (China Petrochemical Corp.).

ANALYSIS > ZHANG has been transfered from the position of CPC Secretary of Binhai District in Tianjin Autonomous Municipality, he held since 2018. He made all his previous career in the coal sector, including as chairman of China Shenhua Group, the country's number 1 coal extractor, from 2014 untill its 2017 merger with electricity producer Guodian (to form energy giant

CHN Energy). Before becoming general manager of Shenhua in 2008, ZHANG acquired experience close to the problematics of the oil refining sector, as chairman of its Shenhua CTL & Chemical Co subsidiary, dedicated to the Coal-To-Liquid activity.

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** EXEMPLE : Appointments concerning Shandong province :

THE CHINA INDUSTRIAL MONITOR 06/15/2020
JI Binchang has been appointed vice-governor of **Shandong** Province.

ANALYSIS > JI has been transfered from his position as director of the IIT (Industry and Information Technologies) Department of Shandong government. He made all his career in the province's economic management system, including as deputy director of Shandong SASAC, then chairman of its Shandong Luxin Investment Holding Group, before heading the IIT Department.

THE CHINA INDUSTRIAL MONITOR 04/30/2020
As had been announced as probable when he was appointed CPC deputy secretary (please see Issue 29 of The China Industrial Monitor, 04/15/2020), **LI Ganjie** has been appointed Governor of **Shandong** Province.

THE CHINA INDUSTRIAL MONITOR 04/15/2020
LI Ganjie has been appointed CPC deputy secretary of **Shandong** Province.

ANALYSIS > LI has been transfered from his position as Minister of the MEE (Ministry of Ecology and Environment). His appointment should be a prelude to that as Governor of China's second most populous province, and follows the transfer of GONG Zheng from that position to that of mayor of Shanghai Autonomous Municipality (please see The China Industrial Monitor Issue 28, 03/31/2020). LI was Minister of the MEP (Ministry of Environmental Protection), then MEE (after its transformation in 2018), from 2017 to 2020, after having been CPC deputy secretary of Hebei Province. His Ministry played a decisive role in imposing heavy evolutions in Shandong (including partial transfer of its huge aluminium production capacities – please see The China Industrial Monitor Issue 24, 01/15/2020). Follow-up of these issues may have played a role in his transfer, just as his experience as director of the NNSA (National Nuclear Safety Administration) of the MEP (and its predecessor) between 2002 and 2016, as Shandong will see important developments in the field including operation of the country's first HTGCR (High Temperature Gas-Cooled Reactor – please see The China Industrial Monitor Issue 25, 01/30/2020).

WANG Ande has been appointed CPC Secretary of **Linyi**, in Shandong.

ANALYSIS > WANG has been transfered from his position as director of the Shandong Environmental Protection Department – confirming importance given to this question in the province today (please see above, LI Ganjie's appointement). He worked previously in the province's Department of Water Resources.

ZHANG Haibo has been appointed CPC Secretary of **Weihai**, in Shandong.

ANALYSIS > ZHANG has been promoted from the position of mayor, he held since 2017. Before being transfered to Weihai, he was deputy mayor of the regional capital, Jinan.

YAN Jianbo has been appointed mayor of **Weihai**, in Shandong.

ANALYSIS > YAN has been transfered from his position as CPC deputy secretary of Jining, also in Shandong. He previously worked, also in the province, as director of the Linyi municipality High-Tech Industrial Development Zone, then vice-mayor of Heze.

LIN Hongyu has been appointed mayor of **Jining**, in Shandong.

ANALYSIS > LIN has been transfered from his position as CPC deputy secretary of Weifang, also in Shandong.

THE CHINA INDUSTRIAL MONITOR 03/31/2020

SUN Licheng has been appointed CPC Secretary of **Jinan**, in Shandong.

ANALYSIS > SUN has been deputy governor of Shandong between 2016 and 2019, before this nomination at the head of the regional capital. He was previously deputy governor of Guizhou, after a career begun in the MPS (Ministry of Public Security).

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The Appointments section of *THE CHINA INDUSTRIAL MONITOR* covers :

CENTRAL GOVERNMENT & CPC COMMITTEES

THE CHINA INDUSTRIAL MONITOR 02/28/2020

TIAN Yulong has been appointed Chief Engineer of the **MIIT** (Ministry of Industry and Information Technologies).

ANALYSIS > TIAN has been promoted from the position of Chief Engineer of the SASTIND (State Administration for Science, Technology and Industry for National Defense) of the MIIT. He is an aerospace specialist, having worked in CASIC (China Aerospace Science and Industry Corp.) before joining the SASTIND in 1998.

REGIONAL GOVERNMENTS & CPC COMMITTEES

THE CHINA INDUSTRIAL MONITOR 05/15/2020

ZHANG Xi has been appointed vice-governor of **Anhui** Province.

ANALYSIS > ZHANG has been transfered from Shanghai Autonomous Municipality, where he was District CPC Secretary. He had previous experience in Shanghai SASAC-controled corporations, as deputy general manager of Shanghai Building Materials Group, then deputy general manager of Guosheng Group.

MUNICIPAL GOVERNMENTS & CPC COMMITTEES

THE CHINA INDUSTRIAL MONITOR 04/15/2020

WU Xiaojun has been appointed CPC Secretary of **Nanchang**, in Jiangxi.

Analysis > WU has been transfered to head the province's capital from the position of director of Jiangxi's DRC (Development and Reform Commission) he held since 2017. He was previously vice-mayor of Yingtan, also in Jiangxi.

Corporate

The China Industrial Monitor 01/30/2020

BEI Tao has been appointed chairman of **SDIC** (State Development and Investment Corp.).

Analysis > BEI has been transfered from the position of general manager of PICC (People's Insurance Company of China), he held since 2018. He began his career in ICBC (Industrial and Commercial Bank of China), including as general manager of its Hunan branch, before being deputy general manager of China Life Insurance Group, then deputy general manager of CIC (China Investment Corp.), and general manager of its Central Huijin Investment Co subsidiary. His appointment, in vue of his strong experience of the financial, but also more specifically of the insurance sectors, may be linked to the will of the authorities to bring insurance related capital to the financing of strategic national projects.

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