

## 12 trapped in railway tunnel blast confirmed dead

All of the 12 people trapped in a railway tunnel blast in southwest China's Guizhou Province on Tuesday had been confirmed dead after a 14-hour rescue in the gas-filled tunnel failed to find them.

More than 2,000 rescuers and medical workers braved high carbon monoxide density and dust to search for the trapped workers after the blast ripped through the railway tunnel under construction around 2:50 p.m. in Dafang County, leaving 12 people injured and 12 others trapped.

The rescue work ended at 4:45 a.m. Wednesday.

An investigation is still underway. A gas explosion is suspected as the Qishanyan Tunnel under construction is designed to pass through a coal seam.

The 12 injured are in hospital for treatment. None of them has critical injuries.

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## Doorstop with the Minister for Education and Training, Senator the Hon. Simon Birmingham and the Assistant Minister for Industry, Innovation and Science, the Hon. Craig Laundy MP

### **ASSISTANT MINISTER FOR INDUSTRY, INNOVATION AND SCIENCE:**

A very big welcome to the Education Minister Simon Birmingham and the Prime Minister Malcolm Turnbull. I am not quite as excited as the kids of North Strathfield to have you here who have been over the moon to see you, but on behalf of the parents of Reid, Prime Minister and Minister, a big thank you.

This school is one that will over the next ten years receive \$4.4 million in additional funding. You've had the opportunity this morning to see and have a look at what has been achieved so far and listened to the principal Frances Brewer, who has very kindly hosted us this morning – thank you Frances – about what will be achieved.

You are always welcome here PM and Simon and thanks very much for making this stop today.

**PRIME MINISTER:**

Well thank you Craig and thank you very much Frances and thanks to all the kids and the teachers.

Look, six years ago David Gonski presented a big idea which was that funding for schools should be based on the needs of the students and it should be fairly allocated and it should be consistent across Australia. It shouldn't depend on what state you live in, or what system you're being educated in. Needs-based, consistent, across Australia – that is what we are delivering.

The announcement Simon and I made yesterday with David Gonski is delivering on that vision. Needs-based funding. We are committing \$18.6 billion in additional funding over the next decade and by the end of that decade, right across the country, the funding will be consistent. It will be consistent here and in every state and territory in Australia.

And of course, having achieved that, having delivered on that funding objective, on that big vision of equity for all students, the next step now is to ensure that we get the best outcomes – great teachers, great schools, great results for these little kids here today and thousands more like them. We owe it to them to ensure the public money we're investing in schools, in their future gives them the best educational outcomes so they're at the top of the class.

We've seen in recent years and Simon will explain Australia slipping backwards in terms of results versus those in comparable countries. That's not good enough. Australians should be winners. We should be at the top of the class. That is our commitment to ensure that with these substantial funding commitments that we've made and that states will make, and that parents make in the non-government system as well, that we get the best outcomes.

So that is Gonski 2.0.

We've realised the vision that was set out in the first Gonski report. We are delivering on that Gonski vision and now the next step is to ensure that we get the great results from the very substantial financial commitment we are making.

Birmo – I'll ask you to add to those remarks.

**MINISTER FOR EDUCATION AND TRAINING:**

Thanks Prime Minister and what an awesome example this morning of an incredible school with hard-working dedicated school leaders, teachers, and inspiring children who have taken what has been a record level of funding already and invested it so wisely, so carefully into additional support for their students, additional support that drives up literacy and numeracy skills, that improves their exposure to foreign languages, that enhances

their knowledge in science. These are the things we want to see happening at every school right around Australia and we can do that and we will achieve that by implementing the Turnbull Government's vision for a single needs-based sector-blind school resourcing standard right across the country informed by, built upon the recommendations of David Gonski's 2011 report.

We are having the courage to implement the vision for schools in Australia that was frankly squibbed by the previous government and they implemented instead 27 different deals based on ancient sweetheart arrangements that ensured inconsistency, that left a system where different schools in different states were getting different levels of federal funding despite having exactly the same need and circumstances. We want to end that and we will end that with our reforms.

And we will invest more as well to make sure that the transition to a consistent model of funding is a fair one for all systems – government, independent, Catholic – all see strong growth above inflation, above wages, above any reasonable measure right across the economy.

And of course we have commissioned David Gonski together with a panel of education experts to do a second significant piece of work, and that second significant piece of work is because we are acting on the recommendations of his first report and now rather than looking at how much money the system has, or how it is distributed we want David to do a piece of work that looks at how it can best be spent by schools like this one to deliver the best possible lift in student performance right across our education system.

Craig, as you outlined before, this school is a significant beneficiary, like more than 9,000 other schools right around Australia.

Next year under our reforms this school will receive more than \$70,000 in additional funding. Each year over the next ten years, it will get \$70-80-90,000 extra additionally each and every year, building up to more than \$4 million in additional funding for a school like this, based on the need of the school.

As we saw going around, this is a school with a high number of students who come from backgrounds, language backgrounds other than English. That is one of the need factors that we support under a fair needs-based model, along with students from low socio-economic backgrounds, students with a disability, students from schools in small rural and regional areas of Australia. These are the types of things that give us a system that sees credibility and allows us to focus on what matters most, which is backing hard-working principals, teachers, school administrators and support staff to help our students achieve their best.

**PRIME MINISTER:**

Thank you.

**JOURNALIST:**

Prime Minister, some criticism from the Catholic system this morning about

the plan. They're saying they've been targeted and that they weren't properly consulted. Have you blindsided them?

**PRIME MINISTER:**

Well I might ask the Minister to respond to that but the funding increase over the decade for the Catholic system is 3.7 per cent, across the system. So they are seeing real growth, strong growth. But I'll ask the Minister to talk more about the consultation.

**MINISTER FOR EDUCATION AND TRAINING:**

I've had numerous meetings over not just the course of the last few months, but over the entire period of time as Education Minister, talking to state ministers, to school representatives from the Catholic sector, and independent lobbies, about what it is they want to see in our school funding approaches.

Unsurprisingly, people who didn't get everything they asked for might sometimes complain about the consultation. That doesn't mean there wasn't consultation. It just means that we are not going to continue with a system that is based on special deals for one state or another state, one sector or another sector.

Our proposal is to treat every school fairly, equitably, under the same terms, regardless of their background, regardless of their school sector, regardless of their faith. That's an incredibly fair approach to take.

But in terms of the support for Catholic schools, as the Prime Minister indicated, there is growth. Growth over the next four years, in the Catholic school sector of \$1.2 billion in extra funding. Growth on a per student basis over the next four years, of around 3.7 per cent. This is real growth that's going into that sector.

Yes, there is faster growth in the government sector. Yes, we're transitioning everybody to a common point under a common model. But ultimately there is no reason why Catholic parish schools in regional areas of Australia or outer suburban areas should face any penalty under a model where funding is growing by 3.7 per cent and where the need of those smaller regional schools or communities with higher numbers of lower socio-economic people, or migrant populations or the like, will all receive additional funding, whether they are in a government school, an independent school or a Catholic school.

**JOURNALIST:**

Some ACT Catholic schools this morning reported that they might have to close because the deal that they struck with Gillard will be abolished and their funding won't change. Can you guarantee there won't be any school closures?

**MINISTER FOR EDUCATION AND TRAINING:**

I think there is a lot of exaggeration coming from the odd commentator at

present. I was really pleased on Adelaide radio for example this morning to have a Catholic school principal ring in and tell us how excited he was about what we were proposing, how positive it was for investment in schools, including in Catholic schools to have a true needs-based model built on the needs of those schools from the ground up.

Now there are some sectors in some jurisdictions that need some special support for transition. And we have committed to work with them, including the Catholic sector in the ACT.

But across every other jurisdiction in Australia, Catholic schools will see funding growth, at a minimum in Victoria, 3.5 per cent per student, growing up to around 4.5 per cent per student in Tasmania. They are all starting from different positions. We want to transition them to a common point. Of course to get them to that common scenario in 10 years, we have to index them at different levels. That's because of the history, the legacy of special deals that have left us with the mess we have at present that this government is taking the action no-one before has done to clean up.

**JOURNALIST:**

When are you planning to introduce this legislation to Parliament? Will it be next week?

**PRIME MINISTER:**

The legislation will be introduced in the Budget sessions, I believe.

**MINISTER FOR EDUCATION AND TRAINING:**

In the next couple of weeks.

**PRIME MINISTER:**

In the next couple of weeks – yeah.

**JOURNALIST:**

And if it doesn't get passed? How much money can the schools expect in the coming-

**PRIME MINISTER:**

I often get this question about what will happen if legislation doesn't get through the Senate. Amazingly, we get a lot of legislation through the Senate. So, we are confident that the merits of this proposal will be appealing to a majority of senators. We will be working hard to persuade all senators, including the Labor Party and the Greens and crossbenchers, to support it.

This is delivering on that great vision of David Gonski's. I mean, who can argue with the proposition that funding should be needs-based? Who can argue with that? Who can argue with the proposition that it should be consistent

across Australia?

So this is a fair approach.

Now we have obviously got to get there, get to that point as soon as we can. We are allowing 10 years to do so. That is why during that 10 years, some schools will advance at different rates to others. But you've got to get to that point, otherwise you end up like the Labor Party, where the Labor Party has left us with 27 conflicting and different deals, all these special deals. Under their model, it would take 150 years – literally 150 years – for there to be that fairness, that consistency and fairness.

So we think this is a very strong proposal. It is a very strong reform. It is consistent with the Gonski vision and it is fundamentally fair. It is needs-based. It's fair, it's needs-based and it's consistent.

**JOURNALIST:**

Prime Minister, you've spoken about consistency and fairness – could you talk to us about how, nonetheless, there will be schools that will lose money and so, as such, there are losers from this action?

Well I'll ask, the Minister can enlarge on that but it is a very, very small number. But perhaps you can go into that Birmo?

**MINISTER FOR EDUCATION AND TRAINING:**

Let's keep a sense of perspective here. There are 24 schools over the next couple of years who might face small reductions in funding, reductions of around one or two per cent. Reductions on a per student basis for some of those schools of \$1 or \$2 per student.

There are 9,000-plus schools that are going to face significant growth. Different rates of growth for those schools because they're all starting at different points under the disparate mess of arrangements that are in place from the previous government which we're proposing to clean up.

But ultimately, every school will be at the same point at the needs-based funding payment based on their individual school circumstances. And at the end of those 10 years, then every school will be indexed according to fair cost growth to ensure they keep up then with their fair share of funding under that consistent formula.

**JOURNALIST:**

But nonetheless, it is a break from the past that schools would not be worse off?

**MINISTER FOR EDUCATION AND TRAINING:**

We are taking the difficult decision of cleaning up a system riddled with inconsistencies and ancient sweetheart deals and that means making some difficult decisions but by investing \$18.6 billion extra over the next 10

years, we have managed to make sure that we can fix the system while delivering strong growth in funding for more than 9,000 schools. Schools like this one – government primary school here in Sydney, with large numbers of students from language backgrounds other than English, that is going to see more than \$4 million in additional support to enable it to help its students succeed in the future.

**JOURNALIST:**

Will you release the names of those schools that are going to lose that funding?

**MINISTER FOR EDUCATION AND TRAINING:**

We will have, over the next few days, available a public calculator that will enable anybody – a parent, a school leader or others – to go online and take a look at what our funding model means for each and every school.

But before we get to the point of releasing those details publicly, it is only fair and reasonable that we have time for my department to speak with those 24 schools to make sure they have time to speak with their school council and their parent community to make sure that they appreciate and understand how it will be implemented. As I said, the impact on them though is incredibly modest in most instances. Sometimes as little an impact as just \$1 or \$2 per student.

**JOURNALIST:**

Do you think it might be the Greens that get this funding package over the line for you?

**PRIME MINISTER:**

Look I'm not going to speculate on the Senate. Again I am often invited to do that and I have often been told that legislation won't get through the Senate and then we disappoint the press gallery by securing the support of the Senate.

We will just continue to work hard, and delivering. This is what we do, this is what my Government does – delivering the right policies for Australia. That is our commitment and we have had a lot of success working with the Senate. We respect the Senators, all of them and we will be seeking their support for this very fair and very important reform.

**JOURNALIST:**

Prime Minister, you have made a lot of Western Sydney focused announcements over the last few weeks. Some in the Victorian Government say you may be ignoring them, is that true?

**PRIME MINISTER:**

Yes, I have heard that criticism. That is absolutely untrue.

We are committed to strong investment and infrastructure in Victoria – 20 per cent of our national investment in road infrastructure is in Victoria.

You have, however, and again I don't want to spoil this beautiful discussion about education with a partisan note, but you do have to remember that the State Government, Labor Government in Victoria, has the distinction, if you can call it that, of spending \$1.2 billion of taxpayers' money not building a road. I mean, a lot of governments spend that sort of money building a road. In Victoria they spent \$1.2 billion cancelling the East West Link – a vitally important piece of infrastructure.

Now, we are supporting important investments in infrastructure in Victoria – the freeway, Monash Freeway and others – but it is, you have to ask some questions – Victorians have to ask some very serious questions about the way in which their own state government is misdirecting their taxes in terms of infrastructure.

**JOURNALIST:**

Are you also abandoning the Cross River Rail project in Brisbane?

**PRIME MINISTER:**

As far as Cross River Rail – this is an important urban rail project that has been proposed by the Queensland Government – at this stage it is at an early stage. We have actually provided \$10 million towards a proper business case and analysis of the project so that the planning can be brought up to the right level.

It is vitally important when you develop these elements of urban infrastructure, whether it is a rail line, particularly with rail, to make sure you get the right outcomes in terms of urban amenity, in terms of development to ensure that wherever possible you can capture some of the increase in property values occasioned by the construction of the rail line to enable you to build it.

It is a complex business, it needs planning and it needs that work. We are committed to doing that and we are taking it one step at a time in a methodical, consistent way.

In terms of rail in Queensland, of course one of the first announcements I made as Prime Minister was commit to the next stage of the light rail on the Gold Coast.

We are putting in an enormous amount of resources into infrastructure in Queensland and I was just up there just earlier in the week of course talking about our investments in Townsville where we have a City Deal and we announced the appointment of the contractor to build the new stadium to which we're contributing \$100 million.

So right across the country, we are building, we are committed to developing the Infrastructure Australia needs to lead and succeed in the 21st century. Thank you all very much.



**JOURNALIST:**

What will be discussed in your meeting with President Trump?

**PRIME MINISTER:**

Well, thank you very much. Yes, we will have a lot of issues to discuss and in terms of, obviously in terms the national security issues, our Alliance is fundamental.

As you know, the visit is as part of the commemoration of the Battle of the Coral Sea, the 75th Anniversary of that great turning point in the Second World War where the United States Navy and the Royal Australian Navy together turned back a Japanese invasion force headed for Port Moresby. Which if it had got to Port Moresby and occupied Port Moresby, would have cut Australia off from our ally in the United States. It was a critical battle and a great example of the alliance and the first occasion Australian and American war ships operated together. American warships under the command of an Australian commander, Australian naval vessels under the overall command of an American admiral, so it followed on from that first occasion, 99 years ago in the First World War, where Australian and American troops fought side-by-side.

So we will be commemorating that, that great anniversary, that great victory, that great turning point but, above all, our great Alliance.

**JOURNALIST:**

North Korea will dominate the talks?

**PRIME MINISTER:**

Yes, of course we will be talking about North Korea and the Middle East and many other issues, economic as well.

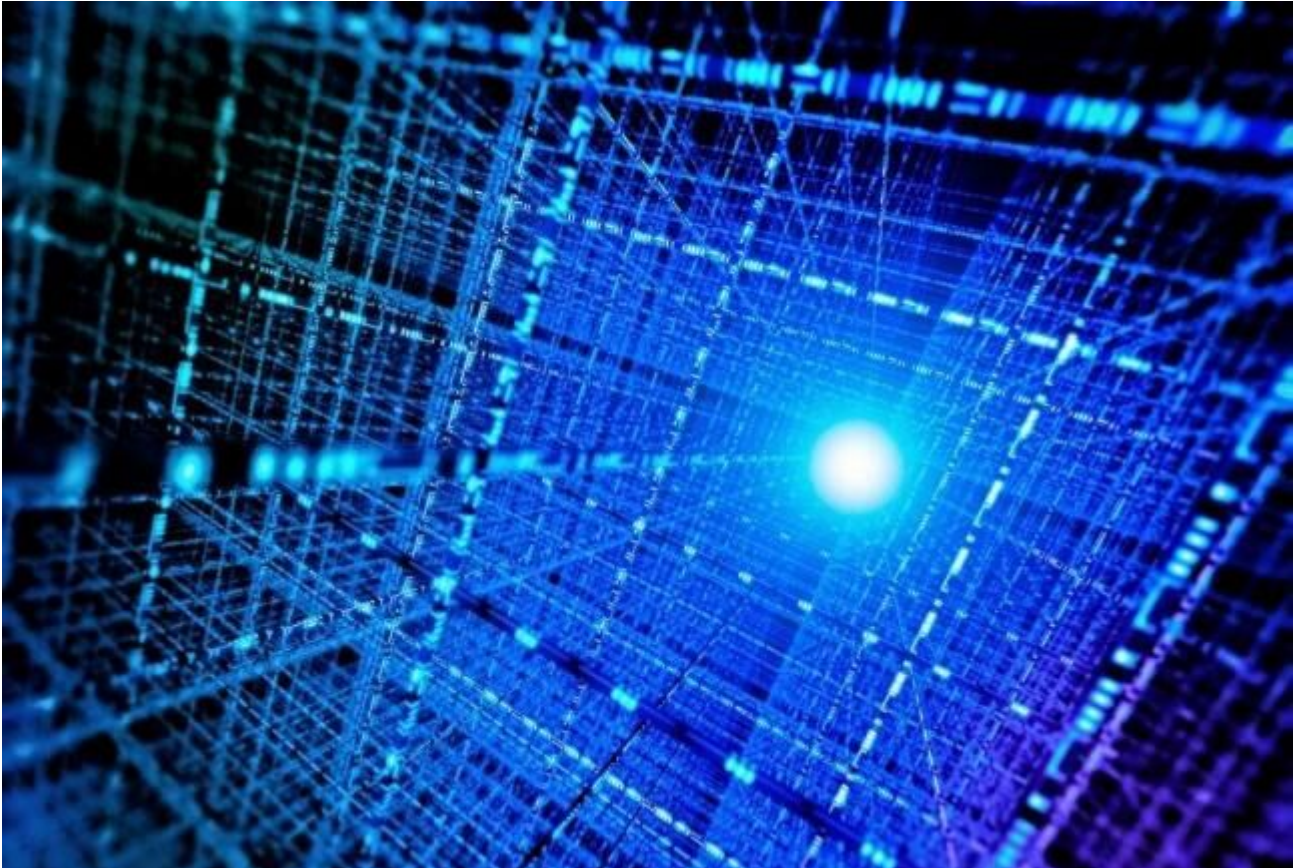
Thank you very much indeed.

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## [Chinese scientists make quantum leap in computing](#)

Chinese scientists have built world's first quantum computing machine that goes beyond the early classical – or conventional – computers, paving the way to the ultimate realization of quantum computing beating classical computers.



Chinese scientists have built world's first quantum computing machine that goes beyond the early classical computers. [Photo / chinagate.cn]

Scientists announced their achievement at a press conference in the Shanghai Institute for Advanced Studies of University of Science and Technology of China on Wednesday.

Many scientists believe quantum computing could in some ways dwarf the processing power of today's supercomputers. The manipulation of multi-particle entanglement is the core of quantum computing technology and has been the focus of international competition in quantum computing research.

Recently, Chinese leading quantum physicist Pan Jianwei, an academician of the Chinese Academy of Sciences and his colleagues – Lu Chaoyang and Zhu Xiaobo, of the University of Science and Technology of China, and Wang Haohua, of Zhejiang University – set two international records in quantum control of the maximal numbers of entangled photonic quantum bits and entangled superconducting quantum bits.

Pan said quantum computers could, in principle, solve certain problems faster than classical computers. Despite substantial progress in the past two decades, building quantum machines that can actually outperform classical computers in some specific tasks – an important milestone termed “quantum supremacy” – remains challenging.

In the quest for quantum supremacy, Boson sampling, an intermediate (that is, non-universal) quantum computer model has received considerable attention, as it requires fewer physical resources than building universal optical quantum computers, Pan said.

Last year, Pan and Lu Chaoyang developed the world's best single photon source based on semiconductor quantum dots. Now, they are using the high-performance single photon source and electronically programmable photonic circuit to build a multi-photon quantum computing prototype to run the Boson sampling task.

The test results show the sampling rate of this prototype is at least 24,000 times faster than international counterparts, according to Pan's team.

At the same time, the prototype quantum computing machine is 10 to 100 times faster than the first electronic computer, ENIAC, and the first transistor computer, TRADIC, in running the classical algorithm, Pan said.

It is the first quantum computing machine based on single photons that goes beyond the early classical computer, and ultimately paves the way to a quantum computer that can beat classical computers. This achievement was published online in the latest issue of Nature Photonics this week.

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## **Mini nuclear reactor now ready to be built**

The first pilot project to use China National Nuclear Corporation's (CNNC) cutting-edge third-generation ACP100 nuclear reactor has completed its preliminary design stage and is qualified for construction in Hainan Province.



Visitors watch the models of ACP 100 nuclear reactor at an expo in Beijing, April 29, 2017. [Photo/China Daily]

The company said that the ACP100, China's first small reactor developed by CNNC for practical use, which the company calls the Linglong One, is expected to be built at the end of this year in the Changjiang Li Autonomous County of Hainan.

All research, development and design procedures have been completed, and work will proceed on the feasibility study, soil and water conservation research, environmental impact assessment, construction land geological disaster risk assessment and seismic safety assessment following the issuing of the relevant permits by the end of next month.

Qian Tianlin, general manager of China Nuclear New Energy Investment, said earlier that small-scale nuclear reactor technology has reached a stage at which it can be used on a pilot basis.

It can be used to generate heat for a residential district replacing coal-fired boilers, he said.

According to Qian, small modular reactors are defined by the International Atomic Energy Agency as advanced reactors producing up to 300 megawatts of power that can largely be built in factories and shipped to utilities and end users.

They were widely promoted in the 1990s, thanks to their enhanced level of security and flexible use, including providing heat and sea desalination, he said.



China is highly supportive of small modular reactors, and the company's Linglong One is the first reactor of its kind in the world to have passed the safety review by the IAEA, a remarkable breakthrough in global small multipurpose modular reactor development.

Qian said he expects mass production of the small modular reactors after the pilot project in Hainan is up and running, and for the technology to be exported globally.

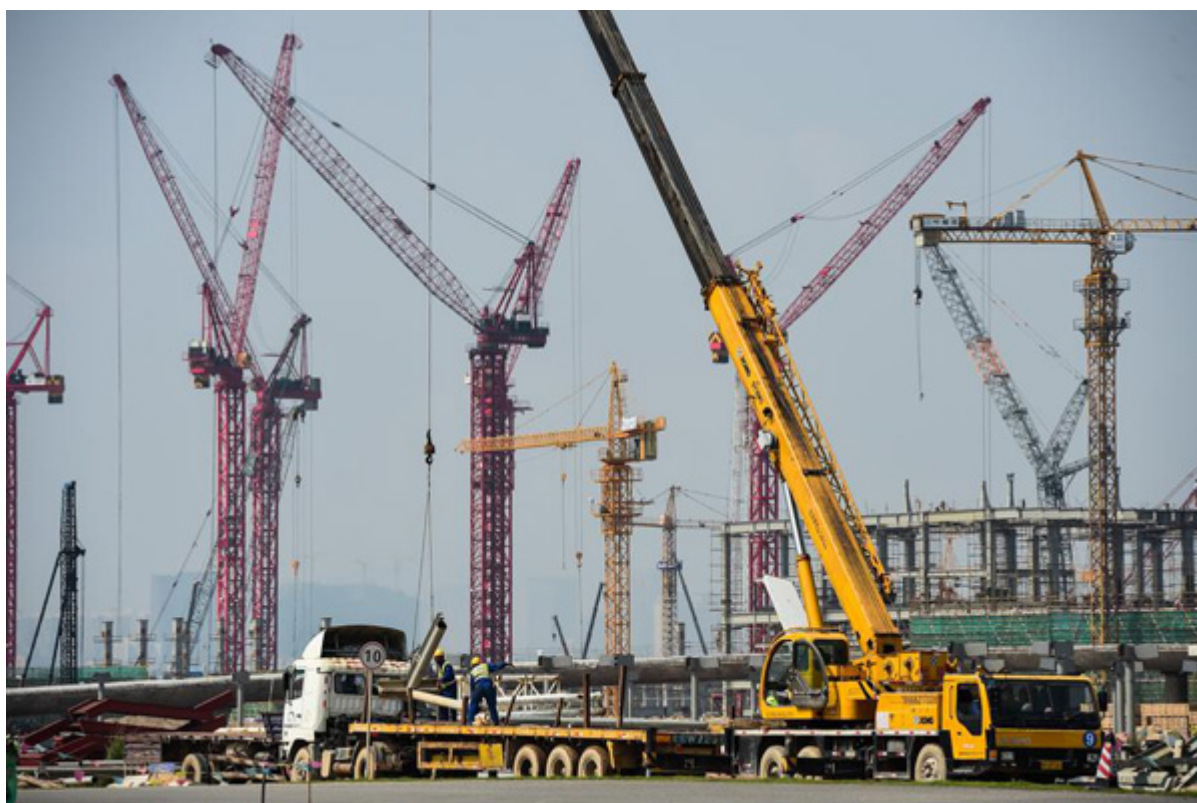
Many countries, including Pakistan, Iran, the United Kingdom, Saudi Arabia, Indonesia, Mongolia, Brazil, Egypt and Canada, have shown a keen interest in potential use of the technology, it said.

Wan Gang, head of the China Institute of Atomic Energy, said small modular reactors are safe amid growing public concern over nuclear safety following the 2011 Fukushima nuclear disaster in Japan.

According to CNNC, compared with million-kilowatt reactor nuclear power plants, the Linglong One features low and controllable core temperatures and is economically superior to other power supply modes and is more environmentally friendly.

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## [Key component of world's longest cross-sea bridge installed](#)



The 55-kilometer bridge connecting Zhuhai in Guangdong province with Hong Kong and Macao is under construction on April 29, 2017. [Photo/Xinhua]

Chinese engineers installed a 6,000-ton key structure of the world's longest cross-sea bridge linking Hong Kong, Zhuhai and Macao.

The wedge, 12-meter-long and weighing more than 25 Airbus A380 jets, was lowered to connect the immersed tubes of the underground tunnel of the bridge, said Lin Ming, chief engineer of the island and tunnel section of the bridge.

The 55-kilometer bridge connects Zhuhai in Guangdong Province with Hong Kong and Macao. It includes a 22.9-km bridge and 6.7-km underground tunnel.

Before the wedge was installed on Tuesday, 33 immersed tubes, each 180 meters long and weighing 80,000 tons, had been installed.

"There is only one wedge for a tunnel, and we cannot afford to fail in its installation. It took two years to prepare for today," said Chen Yue, director of the engineers' office of the bridge's island and tunnel section. The installation procedure took about six hours.

"The margin of error for the wedge is 1.5 centimeters. We have to measure precisely the influence of wind, current and buoyancy force," said Lin.

"It is like putting a needle through a hole – a truly unprecedented event in the history of transportation," Lin said.

A gigantic crane, which was transformed from a tanker, was used to hoist the wedge, lowering it to the desired destination between the underwater tubes.

The wedge will be welded and finished by June, Lin said.

By the end of the year, the bridge will be open to traffic, said Zhu Yongling, director of the bridge management bureau.

Construction began in December of 2009 at Zhuhai. The Y-shaped bridge starts from Lantau Island in Hong Kong with branches to Zhuhai and Macao.

The bridge will cut travel time from Hong Kong to both Zhuhai and Macao from three hours on the road to a 30-minute drive.