

A full-page photograph of Elon Musk dressed as Iron Man. He is wearing the iconic red and gold suit, with the arc reactor glowing in his chest and the repulsor in his right hand. The background is a dramatic, cloudy sky. The text is overlaid on the image in various boxes and fonts.

**TECH BILLIONAIRE'S
SA POWER PLAY**

**Elon Musk promises
to build world's
biggest lithium
ion battery in
100 days -
or it's free**

IRON MAN

**INSIDE
STORY** **Hollywood girlfriend, spaceships and fast cars
- who is Jay's energy saviour [PAGES 6-7]**

Ion-clad deal as billionaire puts jolt into battery

ADAM LANGENBERG
RENATO CASTELLO

A SMALL Mid-North community will be home to the world's biggest lithium ion battery as one of the world's richest men becomes the second billionaire to help fire up South Australia's economy.

But while Premier Jay Weatherill hailed SA as a world leader, the Federal Government warned it would only go a small way to solving the state's energy challenges.

Tesla founder Elon Musk will partner with French renewable energy developer Neoen and the Government to create a 100MW and 129MWh battery farm, half the size of Adelaide Oval, at Jamestown.

The battery - enough to power 30,000 homes - will operate at all times, providing energy to the grid and used to supply emergency back-up power if a blackout is predicted.

It will also reduce reliance on expensive gas and hopefully cut electricity bills across the country.

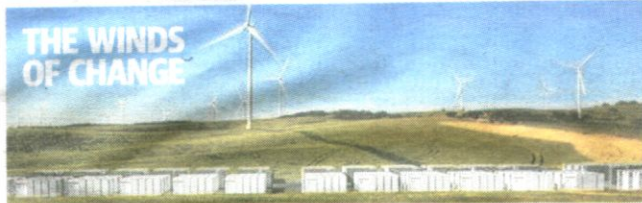
The charismatic billionaire doubled down on his March tweet promising to fix South Australia's power problems inside 100 days, insisting the State Government not pay a cent if the installation went over the deadline.

His ambitious plan to stave off future blackouts comes just days after UK-based billionaire Sanjeev Gupta saved thousands of jobs in Whyalla by buying the city's steelworks.

The battery systems will be paired with 99 wind turbines at Neoen's Hornsdale Wind Farm, with 70 per cent of its generation to be reserved for Government use and the remainder to operate in the market.

Mr Musk, who won the deal from 90 other bidders, said the "massive installation" would create a huge number of local jobs during the construction phase but the self-sustaining system would offer few ongoing jobs.

He said there was "some risk" to the plan - a crucial tenet of the Government's



What is the big battery?

Put simply, it's 100 megawatts of lithium ion panels that will be powered by 99 wind turbines. The Advertiser has been told the "power reserve" (that's what Tesla calls the bank of panels) will be half the size of the Adelaide Oval.

Will it be the world's biggest?

It's well short of being the world's biggest battery - but it's by far the world's biggest lithium ion battery farm. Tesla chief executive Elon Musk said the previous biggest lithium ion battery was 30MW.

Where will it be built?

At the Hornsdale wind farm, owned by French renewable energy company Neoen. The farm is at Jamestown, just over 2½-hour drive from Adelaide in the state's Mid-North.

Will it be built within 100 days?

Not quite. The 100-day period begins once the energy market operator signs off on the connectivity agreement signed

by Tesla, Neoen and the State Government. That means a likely December 1 start date.

What's the cost?

Unclear. The State Government has a \$150 million renewable technology fund and Treasurer Tom Koutsantonis insists there's still room to spare after this deal. Tesla and Neoen are investing as joint partners. All we know is Mr Musk said it would cost his company \$50 million or more if it didn't meet the 100-day deadline.

How many jobs will it create?

Also unclear. Mr Musk said a large number of local jobs would be created during construction but few ongoing roles.

Will it solve our power crisis and bring down prices?

By operating in the ancillary services market, it is almost assured to bring down peak prices. But will 100MWs be enough to stop the blackouts? Not on its own - and the Treasurer will have a legion of diesel generators at the ready.

\$550 million energy plan necessitated by a series of blackouts and soaring energy prices.

"This is not a minor foray into the frontier," Mr Musk said. "We're confident in our modelling techniques and in the design of the system but whenever you make something three times bigger than anything that's come before, there's always some risk."

All parties have signed off on the plan, but the 100-day countdown will not begin until it receives the tick of approval from the Australian Energy Market Operator. It is expected to be operating from the start of December.

Mr Weatherill has continually promised the battery would be in place by the start

of summer, and he stuck with that timeframe yesterday. The Premier hailed the "historic agreement", which he said would completely transform the way renewable energy is stored and stabilise SA's electricity grid.

"SA has been leading the nation in renewable energy - now we are leading the world in battery storage," he said.

"It opens up new possibilities for renewable energy in this state, in this nation and around the world, to be dispatchable. Battery storage is the future of our national energy market."

He said the venture would have significant economic spin-offs.

Northern Areas Council

Mayor Dennis Clark said it was fantastic for the region. "Well, it's going to be brilliant," Mr Clark said.

"I haven't got a lot of information or detail at this stage but an investment of that size is always a good news story."

"The jobs that it will bring are all good for our region."

Federal Energy Minister Josh Frydenberg said he welcomed the investment but it was "small compared to the scale of the problem the Government created".

"The new battery is 129MWh compared to the 1000MWh of storage at the Cultana pumped hydro project in the Upper Spencer Gulf the (Federal) Government is supporting through ARENA, and the 350,000MWh of additional storage we will get from Snowy Hydro 2.0," he said.

The announcement comes during a rocky week for the billionaire entrepreneur as shares in Tesla plunged almost 15 per cent.

That wiped \$9 billion from the company's balance sheet and knocked it off the perch as America's most valuable car maker, in favour of GM.

Neoen Australia managing director Franck Woitiez said the battery would operate in the frequency and ancillary services market, creating competition and driving down prices.

"The wind farm is selling electricity between half and two-thirds of the average price of the market," he said.

"So with the storage, we'll be able to bring this cheaper electricity ... when the people need it and not only when the wind blows - and that's what we want to do."

State Opposition Leader Steven Marshall said it was great an entrepreneur like Mr Musk was working with the state. "Unfortunately, Mr Musk is here because the Government has delivered the most expensive and least reliable electricity network in the nation," Mr Marshall said.

PAGE 50: EDITORIAL
PAGE 51: VALDMAN'S VIEW



A messiah, or

MICHAEL MCGUIRE

CALLING it a just a press conference doesn't do it justice. This was an event. A happening. A genuine bona fide celebrity was in town. He arrived via private jet and even goes out with Johnny Depp's ex, Hollywood actress Amber Heard.

So the rules were set: Mr Elon Musk doesn't like flash photography. Mr Elon Musk won't pose for photos.

Mr Elon Musk won't answer questions not related to building world's biggest lithium-ion battery in the state's Mid-North.

The government staffer, who wouldn't even confirm Musk was showing up at the Adelaide Oval event, was especially insistent on the last one. "He may walk out" if he doesn't like the questions, the assembled hacks were told.

What has South Australia got itself into?

There is no doubt Elon

Musk is a man of many parts. To millions he is a genius, a visionary who will change the way humanity works. A man who will take us to Mars and have us communicating with "consensual telepathy". A man who will rid the world of fossil fuels with his electric Tesla cars and solar panels.

The tech world loves a deity, after all. Think Steve Jobs and Apple. Musk has stepped into Jobs' shoes as the cult leader most likely to save humanity.

For goodness sake, the legend is that actor Robert Downey Jr based his depiction of Iron Man's Tony Stark on the thrice-married (twice to the same woman) Musk. Some say Musk is part slick-talking, highly skilled businessman, part playboy with a fondness for fast cars and space ships.

Yet others believe he is a man who has built his own \$US15 billion fortune on the back of billions of dollars of government grants and subsidies all over the world. They

Whyalla saviour's powerful push

BILLIONAIRE industrialist and new owner of Arrium, Sanjeev Gupta, has criticised the State Government's reliance on solar and wind power, calling them "inefficient".

"South Australia already has a lot of renewable power, that is true, but it also has a

problem because all the renewable power it has today is inefficient, it's not dispatchable," Mr Gupta said.

Instead, the 45-year-old businessman said he would be focusing on pumped storage hydro-electricity.

"There is an opportunity in

Whyalla to use the empty mine pits as reservoirs for pump storage," Mr Gupta said.

The renewable energy source relies on pumping sea water into reservoirs while electricity is cheap.

The stored water is then used to power turbines when

the price of electricity rises, relying on the gravitational potential of water.

"That will be the key area, we will look at solar as well, but pump storage will be the key," Mr Gupta said. "We have done some work on this already."

PAGES 14-15: GUPTA'S VISION

GO GETTER: Tesla CEO Elon Musk with Premier Jay Weatherill at Adelaide Oval for the announcement; Musk with partner Amber Heard, right; and with one of his company's early vehicles, far right. Main picture: TAIT SCHMAAL



ELON MUSK ON ...

SOUTH AUSTRALIA

I certainly don't feel sorry for South Australia. It's a great place, in fact I'm pretty darn impressed with South Australia wanting to do a project of this magnitude that's beyond anything else in the world.

SPACE TRAVEL

"I'm not saying I'm sceptical of (travelling to) the stars. I just wonder what humanity will even look like when we try to do that. If we can establish a Mars colony, we can almost certainly colonise the whole solar system, because we'll have created a strong economic forcing function for the improvement of space travel."

FLYING CARS

"I've thought about it quite a lot ... We could definitely make a flying car — but that's not the hard part ... The hard part is, how do you make a flying car that's super safe and quiet? Because if it's a howler, you're going to make people very unhappy."

CLIMATE CHANGE

"We're running the most dangerous experiment in history right now, which is to see how much carbon dioxide the atmosphere can handle before there is an environmental catastrophe."

BUSINESS PHILOSOPHY

"People work better when they know what the goal is and why. It's important that people look forward to coming to work."

LIFE LESSONS

"People should pursue what they're passionate about. That will make them happier than pretty much anything else."

FEELING FEAR

"I think I feel fear quite strongly. It's not as though I have the absence of fear, I feel it quite strongly. But there are times when something is important enough and you believe in it enough that you do it despite fear."

PERSEVERANCE

"If something is important enough, even if the odds are against you, you should still do it."

ARTIFICIAL INTELLIGENCE

"I think AI is probably the single biggest item in the near term that's likely to affect humanity. So it's very important that we have the advent of AI in a good way, that it's something that if you could look into a crystal ball and see the future, you would like that outcome. Because it is something that could go wrong ... So we really need to make sure it goes right."

POPULATION GROWTH

"The world's population is accelerating towards collapse, but few seem to notice or care."

EDUCATION

"A lot of education is very Vaudevillian, you've got someone standing up they're lecturing a pupil and they've done the same lecture 20 years in a row. If you can explain the why of things, that can make a huge difference to people's motivation and they understand purpose."

LIFE AND TIMES OF A BUSINESS MAGNATE

NAME: Elon Reeve Musk

AGE: 46
BORN: June 28, 1971, in Pretoria, South Africa

EDUCATION: Stanford University, University of Pennsylvania, Queen's University, Ontario

COMPANIES: Previously owned Zip2 (division of Compaq Computers) and X.com (became PayPal). Current owner of aerospace company Space X, Tesla Motors and SolarCity Corporation.
NET WORTH: \$22 billion

GIRLFRIEND: Amber Heard

CHILDREN: A father of five boys (twins and triplets) to previous wife Justine Wilson whom he divorced in 2008 before twice marrying and divorcing English actress Talulah Riley.

master salesman - the enigma of Elon Musk



FLASH: Elon Musk's private jet at Adelaide Airport and his celebratory tweet yesterday.



Elon Musk @elonmusk · 2h
This will be the highest power battery system in the world by a factor of 3. Australia rocks!!

Tesla @TeslaMotors
We are installing the world's largest lithium-ion battery storage project in South Australia tesla.com/blog/tesla-pow...

Picture: KERYN STEVENS

would contend Premier Jay Weatherill is the latest in a long line of government leaders to fall under the Musk spell.

And the Premier was positively gushing yesterday, basking in the glow of what looks to be a great coup for SA. Perhaps, even, an election-winning move. "South Australia is already leading the nation. Today, we lead the world," the Premier tweeted with a tad more hubris than strictly necessary for the leader of a state with the highest electricity prices in the world.

THE cost of the big battery wasn't disclosed. The government said it hadn't exhausted its \$150 million renewable technology fund. Musk would

only say that the project would cost his company "probably \$50 million or more" if it didn't meet a 100-day deadline to build it.

That deadline was set three months ago when in an improbable set of circumstances Weatherill, Musk and Australian entrepreneur Mike Cannon-Brookes started a Twitter love-in about how to solve the state's electricity crisis. Musk reckoned he could do it using a bundle of his Tesla batteries.

And if he couldn't finish it in 100 days, the state wouldn't have to pay. So the question remains. Master salesman or a messiah? Maybe both.

Whatever he is - his tale is remarkable. Musk was born in South Africa in 1971 and moved

to Canada when he was 17. He worked cleaning a boiler room for a timber company, landed an internship at a bank and went to the University of Pennsylvania to complete dual degrees in economics and physics.

It was 1995 when he started his first business. It was called Zip2 and it essentially provided a map of local services online. Four years later, the business was sold to Compaq for \$US305 million, of which Musk netted \$US22 million.

Next, he helped found the online payments company PayPal. eBay bought that in 2002 for \$US1.5 billion in 2002. Musk's share was \$US180 million. By then, he had just ticked over 30 years of age and had

already conquered the internet. His next move was a shock to everyone but consistent with dreams he had held since college days.

IN AN interview with his biographer Ashlee Vance, Musk said asked himself back in his uni days: "What do I want to dedicate my life's work to?" The answer was that he wanted to essentially save humanity from itself.

"Maybe I read too many comics as a kid," he told Vance. "In comics, it always seems like they are trying to save the world. It seems like one should try to make the world a better place because the inverse makes no sense."

What he did was set up a company called SpaceX. Musk

also holds the view that at some stage, we will have to evacuate the Earth and set up shop on Mars. He backed himself. In 2002, Musk put \$US100 million of his PayPal money into SpaceX then went about figuring how to make it work.

Two years later, he invested \$70 million in a fledgling car company called Tesla which wanted to do what car giants such as Ford and GM had failed to do and built an electric car that people wanted to buy.

In 2006, he started SolarCity as another part of his program to end fossil fuel reliance.

But these were the years of struggle for Musk. Three test rockets blew up. The Tesla cars cost much more to produce than predicted. Then the global financial crisis hit.

Just before Christmas 2008, Musk was facing bankruptcy. Then salvation arrived from the heavens. NASA awarded SpaceX a \$US1.6 billion contract. At that stage, Musk only had a few hundred dollars left in the bank. The profitability of

SpaceX today is unknown, despite a \$US5.5 billion NASA contract to deliver supplies to the International Space Station, but the company is the only privately operated entity to travel to space and back.

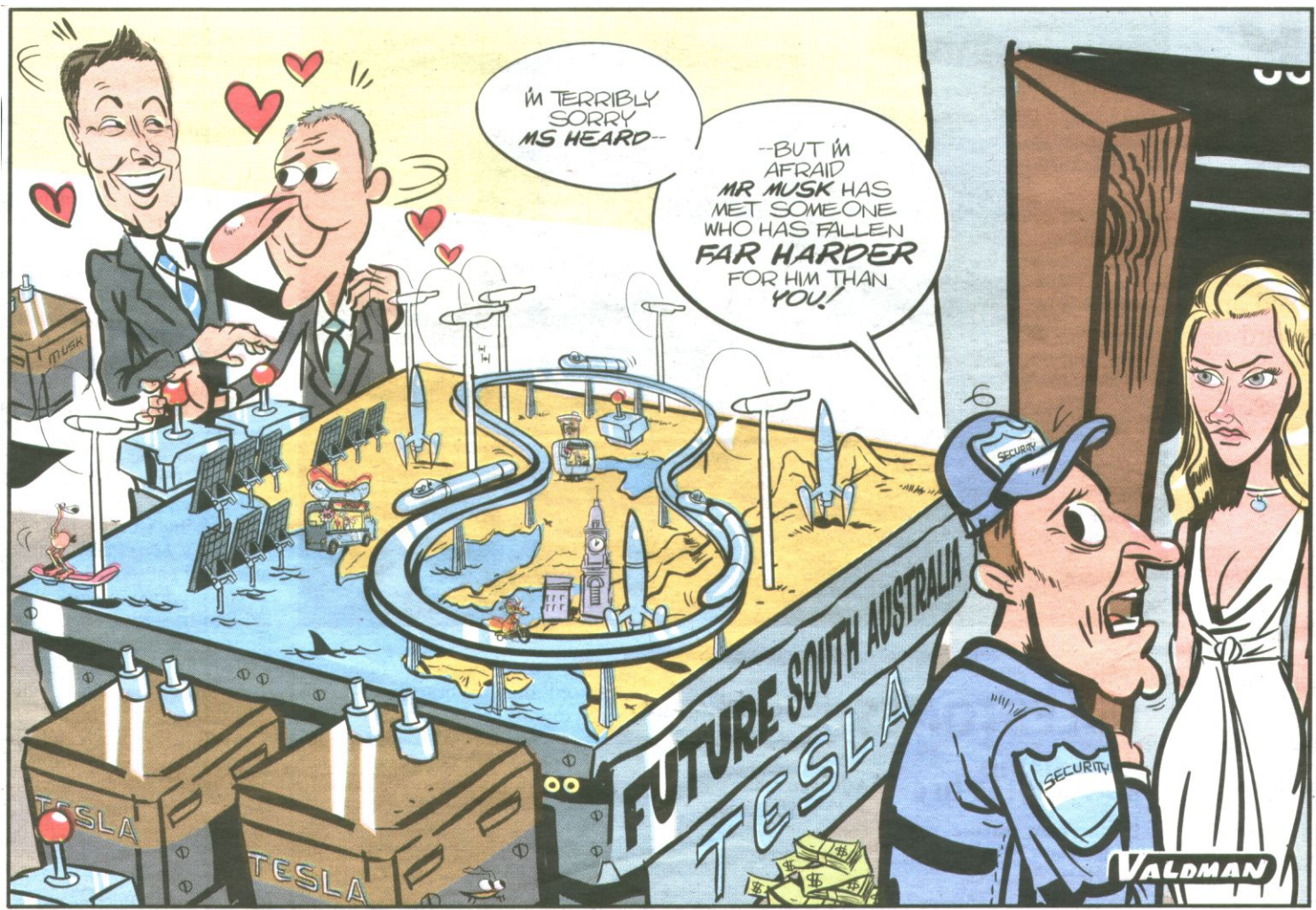
And despite great promises, and more US government support, Tesla is more unprofitable than not. Its production promises often go unmet and it is facing greater competition from the likes of Volvo.

It's a record that some have questioned. In 2015, the respected MIT Technology Review said it was "striking then that Musk insists on a success story that fails to acknowledge the importance of public sector support".

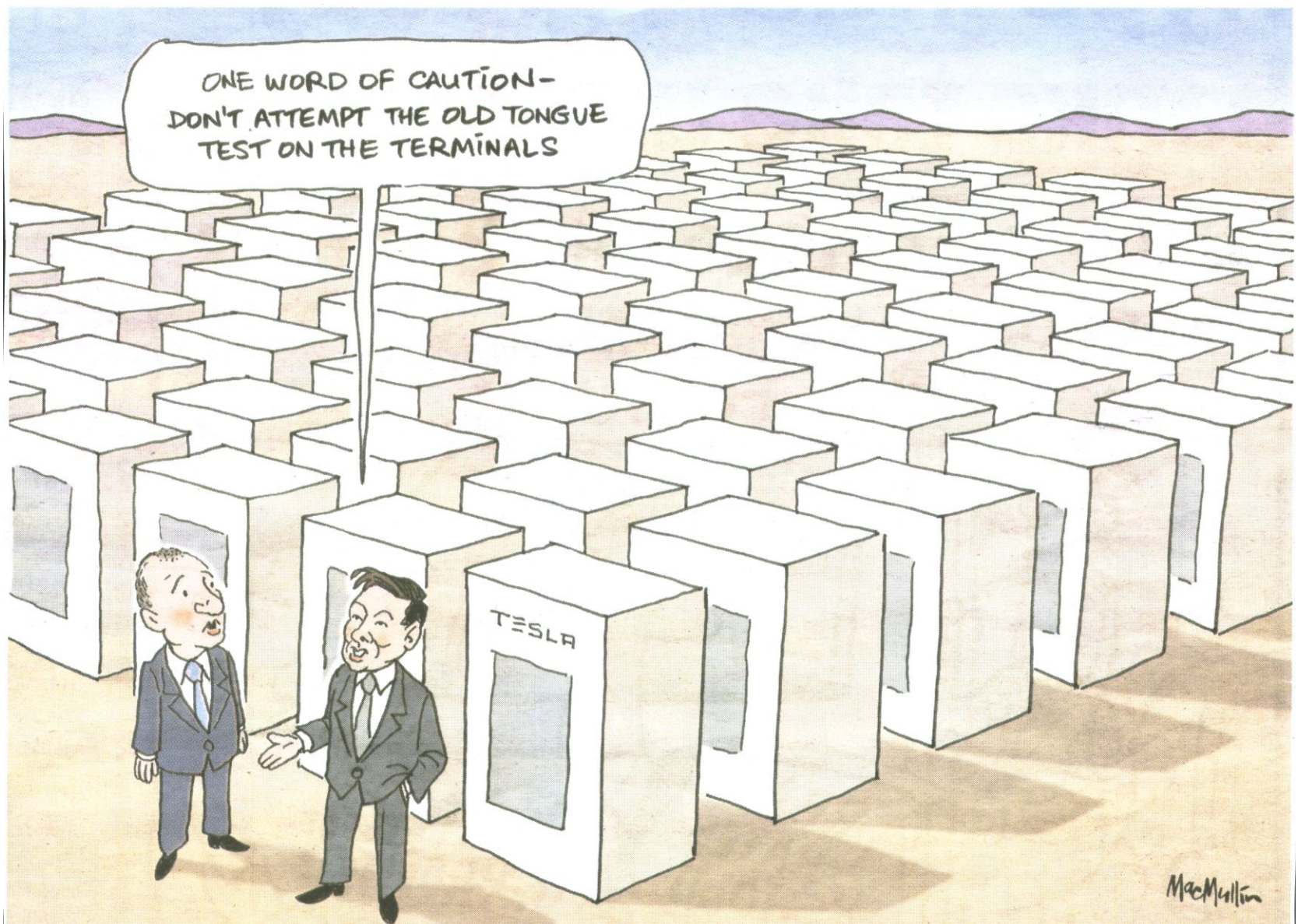
Musk was suitably enthusiastic in his praise of SA yesterday. Praise that Mr Weatherill revelled in, knowing it will boost his re-election hopes.

Some may say we haven't seen such a bromance since Mike Rann fell hard for the cyclist Lance Armstrong.

PAGE 41: SEEN BUT NOT HEARD



The Advertiser, Saturday 8 July 2017 p.51



Sunday Mail, Sunday 9 July 2017 p.76