World News Roundup

Climate

Drought pain

'Artificial snow' could halt Antarctic ice melt

LONDON, July 18, (RTRS): Governments could stop the West Antarctic Ice Sheet from sliding into the ocean and submerging coastal cities by launching a last-ditch engineering project to blanket its surface with "artificial snow", according to a study released on Wednesday.

Scientists believe that global warming has already caused so much melting at the south pole that the giant ice sheet is now on course to disintegrate, which would trigger an eventual global sea level rise of at least three metres (10 feet) over centuries.

Levermann

The authors of the new study envisaged using 12,000 wind turbines to pump seawater 1,500 metres (4,900 feet) up to the surface, where it would be frozen into "snow" to try to weigh the sheet down enough to stop it collapsing any further.

"We have already awoken the giant at the southern pole," said **Anders Levermann**, a professor at Germany's Potsdam Institute for Climate Impact Research, referring to the ice sheet.

Interventions

"We are already at a point of no return if we don't do anything," Levermann, who co-authored the study published in Science Advances, told Reuters. "We can bring it back to the stable point by a small interference now – or by larger and larger interference later."

With the droughts, floods, storms and wildfires associated with climate change intensifying globally, some scientists have begun to seriously contemplate interventions that would have been dismissed as wildly impractical even a few years ago.

Echoing many other climate scientists, Levermann said the most urgent priority was to deliver the rapid cuts in carbon emissions needed to meet the temperature goals of the 2015 Paris Agreement, which is aimed at averting runaway climate impacts.

Although Levermann said full sea level rise projected to follow the collapse of the West Antarctic Ice Sheet might not unfold for hundreds of years, he said he published the paper out of concern for the fate of low-lying populations.

"The sea level rise from Western Antarctica will eventually submerge Hamburg, Shanghai, New York and Hong Kong," said Levermann, a physicist and oceanographer who is also affiliated with Columbia University in the United States. "You can't negotiate with physics: that's the dilemma here."

Melting ice sheets in Greenland, the Arctic and shrinking glaciers around the world would worsen the problem, Levermann warned, saying sea levels could ultimately rise at least five metres (16 feet) even if countries manage to implement the Paris pact.

Levermann and his co-authors used computer models to calculate that the West Antarctic Ice Sheet could be stabilized by depositing a minimum of 7,400 gigatonnes of artificial snow over 10 years around the Pine Island and Thwaites glaciers.

The paper did not give a cost for such an intervention, which Levermann suggested could be borne by governments.

Climate scientists cautioned that even a theoretical prospect of artificially shoring up the West Antarctic Ice Sheet should not be used as an excuse to delay emissions cuts, but welcomed the paper for emphasising the region's importance.

"Nevertheless, the plan is almost – not quite – up there with building giant glass domes to house our cities or moving people to a terraformed Mars to escape the troubles people inflict on our planet," said Jeffrey S. Kargel, a senior scientist at the Planetary Science Institute in Tucson, Arizona.

"The visionary thinking we need most of all is what we can do to take our civilization off dependence on fossil fuels," said Kargel, who was not involved in the study.

❑ ❑ ❑

Hot weather in France next week is expected to prolong drought conditions that have impacted several sectors including nuclear power generation and farming, and led to restrictions on water use in 61 administrative regions.

French meteorological services expect very hot and dry weather next week, with a slight risk of a heatwave in the southeastern part of the country. This comes after a hot spell set record temperatures at the end of June.

The hot weather and lack of rainfall throughout the year have led to very low levels of groundwater, which contributes to the volume and flow of rivers, said **Violaine Bault**, hydrologist at French Geological Survey BRGM.

When groundwater decreases and there is no rainfall, rivers dry up.

The situation was more critical in the Loire, Auvergne-Rhone-Alpes and Burgundy regions in central and eastern France. The Rhone River has been severely impacted.

There has been very little rainfall in the region over the past three winters, Bault said.

French state-controlled utility EDF said on Tuesday that due to flow forecasts for the Rhone river, electricity generation could be restricted at its Bugey, St-Alban and Tricastin nuclear power plants from Saturday, July 20.

The nuclear plants, with a combined capacity of around 10,800 megawatts, use water from the river as coolant.

EDF's use of water is regulated by law to protect plant and animal life. It is obliged to reduce output during hot weather when water temperatures rise, or when river levels and the flow rate are low.

Impacted

The company said two nuclear reactors at the St Alban plant and one at Bugey could be impacted over the weekend, but production losses are expected to be lower from Monday.

A spokesman for EDF said the utility had carried out modifications at its reactors after the 2003 and 2006 heatwaves to adapt them to hot conditions.

He said the changes enabled the plants to cut water use, while ventilation systems were added to reduce the impact of high temperatures.

Grain crops in the EU's largest producing country should also be affected, especially spring crops such as maize and sunflower which are at key development stages. Wheat crops are less at risk, with harvesting underway in many parts of France.

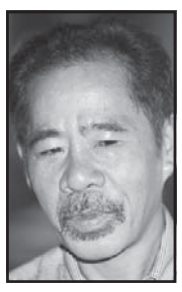
Maize fields, which are widely irrigated, should suffer from increasing restrictions on water use.

Other fields have already passed a critical point, with farmers reporting irreparable damage.

"There is no rain forecast until the end of the month, so all of it will be roasted," said crop grower **Christian Piveteau** in Montbert, western France.

This July 2019 photo released by the Indian Space Research Organization (ISRO) shows its Geosynchronous Satellite Launch Vehicle (GSLV) MkIII-M1 at its launch pad in Sriharikota, an island off India's south-eastern coast. India's space agency says it will launch its spacecraft to the south pole of the moon on July 22 after an aborted effort originally scheduled for July 15. (AP)

This June 25, 2019 photo provided by Peter Cowin shows a page from his scrapbook of Apollo 11 memorabilia at his home in Cheltenham, England. On July 21, 1969, Peter rolled out of bed around 3 am to watch the moon landing. 'I was something of a space junkie at the time,' he said. He was 13 and the only one in his family to wake up because the others were resting up for their vacation that started later that day. 'At first the picture was upside down and horribly grainy, but it improved as time went on so I could see two ghostly figures – raising the flag, setting up experiments, and taking that 'giant leap for mankind'. The day after, it seemed as if the whole world was celebrating and uplifted at the thought of what 'we' had achieved. The moon landings showed us that mankind could achieve absolutely anything it set its mind to.' (AP)



Tuuga

Keating

Discovery

'Coffin' under restoration: Experts have begun restoration work on the golden-plated coffin of Egypt's boy-king Tutankhamun for the first time since the discovery of the tomb in 1922, the Egyptian Ministry of Antiquities said on Wednesday.

The coffin and the treasured collection of Tutankhamun's tomb are expected to be the centerpiece of the new Grand Egyptian Museum (GEM) that Egypt will open next year near the Pyramids of Giza.

British archaeologist Haward Carter discovered the tomb of the 18th dynasty king in the Valley of the Kings in Luxor in 1922. The tomb was untouched and included about 5,000 artifacts.

The ministry said the coffin was transported from southern Egypt to the GEM three days ago "in order to be restored for the first time since the tomb's discovery". (RTRS)

❑ ❑ ❑

Orangutan numbers drop: Orangutan populations in forest patches found in oil palm estates in the eastern Malaysian state of Sabah fell as much as 30% in 15 years, but the overall population of the species in the area is stable, World Wide Fund for Nature (WWF) said.

WWF's findings, which it says are the result of the most intensive survey ever done on any great ape in the world, show that orangutan numbers fell by 30% and 15% respectively in Kulamba and Tabin, in eastern Sabah, between 2002 and 2017.

Orangutans are found in the rain-forests of Borneo, where Sabah lies, and on the Indonesian island of Sumatra.

At least 650 orangutans were lost in protected areas of Sabah's eastern lowlands between 2002 and 2017, WWF said. The overall population of orangutans in Sabah remained steady at around 11,000.

But forest patches within plantation landscapes allowed orangutans to travel between forested areas and were key to their survival, especially in the lowlands of Sabah, said **Augustine Tuuga**, director of Sabah Wildlife Department. (AP)

❑ ❑ ❑

'End protections for seals': A Massachusetts citizen's group is calling for eliminating federal protections for seals as Cape Cod officials seek ways to protect beach-goers from great white sharks.

Peter Howell, a founder of the Seal Action Committee, says the Nantucket-based group wants Congress to amend the federal Marine Mammal Protection Act so that seals and other species can be removed from the law's list of protected animals if their populations have sufficiently rebounded.

The call comes as the region's seal population – estimated in the hundreds of thousands – has been blamed for drawing droves of great white sharks in recent years. Seals are the favored meal for the powerful predators.

But amending the federal law could be a longshot since the idea doesn't appear to have strong support among members of Cape Cod's congressional delegation, said Commission Chair Ronald Bergstrom.

Democratic Rep **Bill Keating**, who represents Cape Cod, said delisting seals from the protection act wouldn't change things. (RTRS)

Space

'We are building for long term'

NASA aims to build on moon for Mars

CAPE CANAVERAL, Fla, July 18, (RTRS): Unlike the Apollo program that put astronauts on the moon 50 years ago, NASA is gearing up for a long term presence on Earth's satellite that the agency says will eventually enable humans to reach Mars.

"Now, NASA is working to build a sustainable, open architecture that returns humanity to our nearest neighbor," Jim Bridenstine, the administrator of the US space agency, said in a statement to a Senate committee on Wednesday.

"We are building for the long term, going to the Moon to stay, and moving beyond to Mars."

The next manned mission to the moon will require leaps in robotic technologies and a plan for NASA to work with private companies such as Elon Musk's SpaceX or Jeff Bezos' Blue Origin to help cut the cost of space travel.

Using NASA's Space Launch System, a heavy-lift rocket being built for a debut flight in late 2020, the agency is aiming to return humans to the moon by 2024 in an accelerated timeline set in March by the Trump administration.

No humans have launched from US soil since the space shuttle program ended in 2011.

NASA officials say exploration of the moon and Mars is intertwined, with the moon becoming a test-bed for Mars and providing an opportunity to demonstrate new technologies that could help build self-sustaining extra-terrestrial outposts.

"We are working right now in fact to put together a comprehensive plan on how we would conduct a Mars mission using the technologies that we will be proving at the moon," Bridenstine told reporters on Monday, adding that a mission to the Red Planet could come as soon as 2033.

Technologies that can mine the moon's subsurface water ice to sustain astronaut crews, but also to be broken down into hydrogen and oxygen for use as a rocket propellant, could be crucial for missions to Mars. The planet is reachable in months-long missions when at its closest orbital approach of 35.8 million miles from Earth.

"It's utilization versus curiosity," said roboticist and research professor at Carnegie Mellon University William Whittaker, comparing the Artemis program, as the new lunar mission has been dubbed, with Apollo. Artemis is the twin sister of Apollo and goddess of the moon in Greek mythology.

The last manned mission to the moon was almost a half-century ago in 1972, when Cold War era tensions underscored president John F. Kennedy's push to prove technologies that landed the first humans on the lunar surface.

"That's 50 years of non-progress; I think we all ought to be a little ashamed that we can't do better than that," said Buzz Aldrin, who joined Neil Armstrong in walking on the moon on July 20, 1969.

Bridenstine said shifting political priorities were the key reason NASA had not returned to the surface of Earth's natural satellite since then.

Realistic

"If it wasn't for the political risk, we would be on the moon right now," said the NASA chief, who is working to woo Republican and Democratic lawmakers to approve additional taxpayer funds for the program.

Development of NASA's flagship rocket, Space Launch System, whose main contractor is Boeing Co, is taking years longer than expected with cost overruns of nearly $2 billion, a federal audit released in June found. Those delays could push the rocket's first launch to June 2021, potentially endangering NASA's plan to reach the moon by 2024.

"Cost and schedule matter," Bridenstine said. "So we are working rapidly to put together a team that can assess the cost and schedule of these programs and create a realistic baseline that we can work toward."

Bridenstine, under mounting pressure to meet the White House's 2024 deadline, demoted two longtime heads of NASA's human exploration division last week in a slew of administrative shakeups amid dwindling congressional support for the lunar initiative.

Charlie Duke, who piloted the lunar-landing module during the last lunar mission, Apollo 16, said leadership in the Apollo missions was "bold without being careless."

"Don't be so risk averse that you don't fly," he said.

He added that the decision to put astronauts on top of a massive Saturn V rocket, the launch vehicle used by NASA for the Apollo program, "was a very gutsy call. They went through it carefully and they determined it was OK."

Also:

CHENNAI, India: India's space agency said it will launch a spacecraft to the south pole of the moon on Monday after an aborted effort this week.

The Indian Space Research Organization said that the Chandrayaan-2 launch is now rescheduled at 2:43 pm on Monday. It said Thursday that an expert committee identified the root cause of the previous technical snag and all corrective actions were now implemented.

The mission was called off less than an hour before liftoff of the 640-ton, 14-story rocket launcher on Monday.

Chandrayaan, the Sanskrit word for "moon craft", is designed to make a soft landing on the lunar south pole and send a rover to explore water deposits that were confirmed by a previous orbiting Indian space mission.

The new launch schedule came sooner than expected.

Pallava Bagla, a science editor of the New Delhi Television news channel, had earlier said that launch windows would have to meet several technical criteria and it could take weeks or months for a new date.

Russia's Soyuz-FG booster rocket with the Soyuz MS-13 spaceship that will carry new crew to the International Space Station (ISS) is mounted vertically at the launch pad at the Russian-leased Baikonur cosmodrome, Kazakhstan on July 18. The new Soyuz mission to the International Space Station (ISS) is scheduled on July 20 with US astronaut Andrew Morgan, Russian cosmonaut Alexander Skvortsov and Italian astronaut Luca Parmitano. (AP)