

SNOWY MOUNTAINS CLOUD SEEDING TRIAL AMENDMENT BILL 2012

Bill received from the Legislative Assembly, and read a first time and ordered to be printed on motion by the Hon. Duncan Gay.

Second Reading

The Hon. DUNCAN GAY (Minister for Roads and Ports) [1.00 p.m.]: I move:

That this bill be now read a second time.

I seek leave to have the second reading speech incorporated in *Hansard*.

Leave granted.

The Snowy Mountains Cloud Seeding Trial Amendment Bill 2012 authorises Snowy Hydro Limited to undertake full cloud seeding operations targeting the Snowy water catchment.

This follows eight years of the cloud seeding trial, known as the Snowy Precipitation Enhancement Research Project.

The aim of the research project was to increase snowfall from clouds passing over the target area in the Snowy Mountains, to assess the effectiveness and reliability of precipitation enhancement technology in the region and to identify any adverse environmental impacts.

The trial research project has shown a statistically significant 14 per cent average increase in snow under suitable operating conditions. Furthermore, two separate independent peer reviews support this conclusion, with the Natural Resources Commission report stating:

Cloud seeding has increased snowfall in the overall target area under defined weather and operating conditions.

Professor Gary Jones, the Natural Resources Commission peer reviewer, has stated publicly that the project has shown:

Statistically robust and defensible evidence that cloud-seeding has increased precipitation in an area of the Snowy Mountains, Australia. Statistically significant increases of 9 per cent to 14 per cent snowfall have been documented.

It is important to note that the integrity of the research project is supported by the Natural Resources Commission which in 2010 stated that the research project:

... is of high scientific standard and the evaluation plan is statistically sound.

After extensive review, environmental monitoring and analysis over eight years, no evidence of negative environmental impacts caused by the seeding agent silver iodide and the tracer agent indium sesquioxide has been found.

The Natural Resources Commission report, which supports this conclusion, states that there is:

No evidence that cloud seeding operations have had adverse environmental impacts.

In addition, the Natural Resources Commission independent reviewer publicly stated that there are:

No negative environmental or downstream effects detected.

In the interests of transparency, I should note that the Natural Resources Commission supports the continuation of the trial until the ultimate fate of the seeding chemicals is better understood.

I am pleased that Snowy Hydro Limited has responded to this with the commencement of an independent environmental fate study in 2010. The study, which will take three years to complete, is being undertaken by the University of Queensland as part of a formal doctorate [PhD] research program with results to be reported in the scientific literature.

An environmental fate investigation does not require cloud seeding to be undertaken as a randomised trial and as such it will not impede a move to an operational program.

I further advise that the Cloud Seeding Environmental Management Plan and the Minister's suspension powers will separately provide robust ongoing environmental protection measures.

Based on the evidence that I have outlined there is no environmental justification precluding the move to full operation.

I will now go into detail about the key elements of the Snowy Mountains Cloud Seeding Trial Amendment Bill 2012. The bill amends the Act to include more stringent reporting requirements. Currently, the relevant Ministers, the Minister for Environment and Heritage and the Minister for Planning and Infrastructure, have discretion to require information on cloud seeding operations, which includes the preparation and implementation of an environmental management plan.

The bill amends the Act to include a statutory requirement for Snowy Hydro Limited to prepare and comply with an environmental management plan approved by the relevant Ministers.

The requirements of the plan would be imposed by the relevant Ministers.

On submitting a plan to the Ministers for approval, Snowy Hydro Limited may also be required to provide an independent scientific assessment of the cloud seeding operations to the extent that they differ from the operations currently authorised.

It is intended that the plan will, firstly, incorporate a process to identify and address potential adverse environmental impacts, in particular, with respect to types of operations that differ from the trial or use seeding and tracer agents not used in the trial.

Secondly, the plan will include a process for monitoring and identifying any impacts of cloud seeding operations on the environment.

Thirdly, the plan will include a public review and approval process that must be undertaken

prior to any aerial cloud seeding operations or changes to seeding and tracer agents commencing.

Lastly, the plan will include a dispute resolution process for the resolution of issues between Snowy Hydro Limited, the community, relevant Ministers and New South Wales government agencies.

In addition, under the amendments in this bill, Snowy Hydro Limited will be required to prepare and submit to the relevant Ministers and the Environment Protection Authority an annual report detailing its compliance with the requirements of the approved environmental management plan and research and monitoring of the impact of tracer and seeding agents on the environment.

The bill further provides for the removal of the overall supervision role of the Natural Resources Commission.

This is because the purpose of the Act will no longer be to support cloud seeding of a trial nature.

The separation of the New South Wales Environment Protection Authority and the Office of Environment and Heritage establishes a stand-alone environmental regulatory authority.

The NSW Environment Protection Authority is therefore most suited to independently monitor the ongoing compliance of cloud seeding operations under the approved environmental management plan.

In addition to reviewing the annual reports submitted by Snowy Hydro Limited, the bill authorises the New South Wales Environment Protection Authority to conduct its own review of the cloud seeding operations carried out by Snowy Hydro Limited.

It should be noted that it is not the Government's intention that the New South Wales Environment Protection Authority review the fundamental premise of the cloud seeding operations.

The intention is to ensure that the operations are carried out in accordance with the Act.

The second key element of the bill is to increase the primary target area for increased precipitation from cloud seeding to the whole of the Snowy water catchment as defined in the Snowy Hydro Corporatisation Act 1997.

This is an area of 5,117 square kilometres, slightly more than double the trial area of 2,250 square kilometres.

This will align the target area for cloud seeding operations with the entire area of operation of Snowy Hydro Limited.

By expanding the target area, Snowy Hydro Limited will be in a position to produce more precipitation, which can be used to create electricity and potentially increase the amount of water available for release for agricultural and environmental use.

The third key element of the Snowy Mountains Cloud Seeding Trial Amendment Bill 2012 is to make amendments to provide for aerial delivery of seeding and tracer agents, a method that was not included in the trial.

Aerial delivery will enable more efficient and targeted delivery of the seeding and tracer agents.

It also will minimise the requirement for any new infrastructure for ground-based delivery systems.

I am advised that it is not anticipated that aerial delivery of these agents would have any greater environmental impact than ground-based systems.

This is because agents will be delivered at a greater altitude over a broader area and are unlikely to result in localised impacts.

As the trial did not identify any concentration or accumulation effects from ground-based seeding, it is unlikely that the more dispersed aerial seeding will have any such effects.

Nevertheless, I advise that, as a precautionary measure, the monitoring of such impacts would be included in any approved environmental management plan.

Any shift to aerial seeding would be considered additional to existing operations and its appropriateness would need to be assessed and approved by the relevant Ministers who may also require a public review process to occur.

Further to aerial delivery of agents, the bill also makes amendments to the timing of the discharge of seeding agents.

The Act requires that the discharge of the seeding agent must be at a time when increased precipitation in the target area is likely to fall as snow.

There are no constraints on the elevation at which this should occur. I can advise that 1,400 metres is regarded as the elevation above which precipitation will generally fall as snow within the alpine ski resorts.

Ensuring the discharge of seeding agents occurs during periods when increased precipitation within the Snowy water catchment is likely to fall as snow above 1,400 metres will minimise the undesirable outcome of such precipitation falling as rain within these resorts.

The next amendment under the bill provides for the use of seeding and tracer agents other than the presently allowed silver iodide as a seeding agent and indium sesquioxide as a control tracer.

This is because future advances in technology may lead to the development of alternatives that are not only as environmentally friendly as the existing agents but also more effective or less costly.

This amendment will allow Snowy Hydro Limited to take advantage of technological advances while the Government retains the safeguard of ultimate control of the use of any

new agents.

The approved environmental management plan would monitor the impacts of silver iodide and indium sesquioxide, as well as any new agents.

The existing ban on the use of land-based generators within the Jagungal wilderness area is retained and the bill goes further by amending the Act to ban the use of any land-based generators within any wilderness area and the construction or establishment of any new facilities for cloud seeding operations within wilderness areas.

I advise that infrastructure already established by Snowy Hydro Limited in declared wilderness areas will be retained.

Finally, the bill amends the Act to provide for the inclusion of a mechanism for the National Parks and Wildlife Service to recover costs incurred by the service in connection with cloud seeding operations.

Under the National Parks and Wildlife Act 1974 the National Parks and Wildlife Service is permitted to issue licences.

It is through this process that it can require the payment of fees to cover the costs it incurs in administering cloud seeding operations.

However, as it stands, the Snowy Mountains Cloud Seeding Trial Act 2004 provides for the operation of cloud seeding activities, despite any other New South Wales legislation or planning instrument.

Therefore, the National Parks and Wildlife Service is unable to enforce the licence provisions of the National Parks and Wildlife Act 1974 for cloud seeding operations.

If this amendment is not made to the Act it would preclude the payment of a licensing fee by Snowy Hydro Limited.

The National Parks and Wildlife Service receives licensing or leasing fees for the operation of other commercial activities within Kosciuszko National Park.

This includes mobile telecommunication towers, alpine accommodation and Snowy Hydro Limited infrastructure.

The Government considers it appropriate that Snowy Hydro Limited be required to pay costs incurred by the National Parks and Wildlife Service.

As one can see from the key amendments in the bill I have outlined, it presents an opportunity that will yield substantial benefits to the Snowy Mountains region, rural irrigators, local businesses and the environment.

With the expansion of the target area, there is potential to more than double the amount of extra precipitation produced than was the case under the trial.

Additional water stored in the Snowy scheme will increase certainty of releases for irrigators.

Increased precipitation through cloud seeding will partially offset the impact of any future drought conditions for New South Wales irrigators in the Murray and Murrumbidgee valleys.

Increased snowfall benefits tourism operators and communities in the Snowy Mountains.

Improved snow depth and a longer ski season are both expected outcomes from moving to full operation of cloud seeding activities.

As the member for Monaro often tells me, many businesses in the region depend on good and regular snowfall to provide for a good ski season.

With alpine recreation making a significant contribution to the regional economy, maintaining good snowfall will assist the area to continue to provide substantial benefit to the overall State economy.

Increased snowfall will also provide potential environmental benefits to a number of species in the Snowy alpine regions.

For example, the mountain pigmy possum, the endangered northern and southern corroboree frog, the alpine tree frog, the broad-toothed rat and the alpine herb fields are all vulnerable to shallow or declining snowfall.

Moving to an operation program will therefore assist to avert adverse effects of future reduction in snowfall in the alpine region of New South Wales.

It is important to note that cloud seeding not only provides snow for skiers and water for irrigators but also assists the National Parks and Wildlife Service in the area and the riverine environment of the Snowy and Murray rivers.

Another benefit of moving to full operation of cloud seeding activities is the environmental benefit that is provided by increasing the capability of Snowy Hydro to produce clean, renewable energy.

Snowy Hydro estimates that the additional water resulting from moving to full operation will be an increase on the trial by about 50 per cent or about 20 gigalitres per year.

The additional water will allow Snowy Hydro Limited to produce more hydro-electricity.

The additional amount of hydro-electricity is estimated at 36 gigawatts hours per annum which, if produced by a New South Wales coal plant, would emit the equivalent of over 28,000 tonnes of carbon dioxide emissions annually and burn more than 12,000 tonnes of black coal.

It is clear that there are multiple benefits provided by increasing precipitation in the Snowy Mountains region.

These include additional water for regional communities, increased green energy through hydro-electric production, more consistent energy production, more water for irrigators and the environment, greater flexibility in water use, more snow for the alpine environment,

enhancement of skiing opportunities and increased business for local businesses.

The Snowy Mountains community also has expressed satisfaction and confidence in the operational procedures implemented to minimise risks of impact on the environment.

The Snowy Mountains ski industry, Snowy River shire and Cooma-Monaro shire councils, the New South Wales Irrigators Council, tourist industry groups and local businesses have all voiced their support for cloud seeding to move to an operational program.

There have been very few letters of concern and those few were all from individuals.

Those concerns have been responded to either by the Government or Snowy Hydro Limited, which has contacted individuals directly.

Concerns about negative downwind rainfall impacts were directly investigated by Snowy Hydro Limited in its 2009 report.

It concluded that there was no indication of any seeding impacts on downwind rainfall. It was also concluded that rainfall downwind of the trial occurs under very different conditions from those favourable for cloud seeding.

The Natural Resources Commission agreed with the assessment of Snowy Hydro Limited and further noted that other independent research suggests no impact is associated with cloud seeding as far as the east coast.

The preparation of the bill has been carried out in consultation with the Department of Premier and Cabinet, the Office of Environment and Heritage, including the Environment Protection Authority, the Department of Planning and Infrastructure and Snowy Hydro Limited.

The move to a full operational cloud seeding program will lead to increased snowfalls and inflows to storages in the Snowy Mountains, generating further significant public and environmental benefit.

I commend the bill to the House.