‘A Just Transition’

for the

Latrobe Valley Community

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Executive Summary

There is a major transition going on in the electricity industry with a move away from fossil fuel power to renewables. While this move may benefit Australia as a whole by achieving greenhouse gas reductions, it will have severe consequences for vulnerable communities such as the Latrobe Valley that have been the backbone of Victoria's energy supply needs for decades.

The CFMEU does not oppose the move to renewables but it is vitally important that any such transition is orderly and planned, if power system crisis such as those in South Australia and Tasmania are to be avoided. Advance notice of closures will also greatly assist communities to plan and adapt for the transition.

To ensure a "just transition" for the Latrobe Valley the CFMEU believes that three immediate and practical actions need to be taken by government:

- Implement a Latrobe Valley wide power industry transition scheme
- Ensure the demolition of the Hazelwood and Morwell power stations
- Progressively rehabilitate the Morwell Mine

Additional medium term measures should include a cutting edge design, new build Brown Coal fired power station to replace Hazelwood's capacity and Yallourn's in the medium term to not only maintain Victoria's power supply and system security but also to generate job growth in the Latrobe Valley. This action will avoid a future need to go nuclear to replace base-load generation.

Any new build coal fired power station should be built with carbon capture and storage in mind to make use of the ideal carbon sink in Bass Strait, which would have the additional benefit of increasing oil and gas production to improve economic viability.

Last but not least, alternative uses for the vast 430 billion tonne Brown Coal resource needs to continue to be explored, as does alternative process industries for the Latrobe Valley to diversify its jobs base. Coal drying technology to enable export of Brown Coal reserves would also be a suitable process industry that could add value for Victoria's economy.

Introduction

Australia is currently going through an energy transition, where there is a move away from electricity generated from cheap and reliable coal fired power stations to more expensive renewable sources of power; such as hydro, wind and solar. Gas fired power stations are slightly less greenhouse gas intensive than coal but are much more expensive. Using gas to generate electricity is also inefficient because gas can be piped directly to consumers for heating and cooking in a more efficient manner. For these reasons gas fired power stations currently are only generally used to only cover peak periods of electricity use.

While renewable sources of electrical power generation are desirable, to reduce the impact of global warming, it is vitally important to remember that there is still a need to maintain reliable base-load generation for the following reasons:

1. To ensure electricity supply when the wind doesn't blow or the sun doesn't shine.
2. To keep the price of electricity affordable to all Victorians.
3. To maintain power system frequency and stability.
4. To correct power factor due to reactive and capacitive loading.
5. To ensure reliable and cheap power for economic growth.

There are currently only three economically viable sources of base-load power, with these being hydro, coal and nuclear. Australia is a flat dry continent and the availability of suitable hydroelectric opportunities appear quite limited so this only leaves coal or nuclear as viable base-load alternatives because, as discussed previously, gas is too expensive and a waste of valuable resource to be used for electricity generation.

The CFMEU's position is that cheap Brown Coal generation is safer and a much more socially acceptable as a source of electrical power generation for Victorians than is nuclear energy. Currently 70% of Australia's coal fired power stations are beyond their original design life and utilize out dated designs. This leaves considerable scope for reductions in greenhouse gas emissions by replacing older stations with newer more efficient designs.

For example: currently the most modern and efficient Brown Coal fired power station in Victoria has a steam cycle efficiency of about 34%. If this were replaced by a supercritical boiler and the more efficient turbine design in the form of a new Brown Coal fired power station, then a steam cycle efficiency of 45% could be obtained.

This would equate to a greenhouse gas reduction of 25% for a Loy Yang power station replacement, or for an old power station like Hazelwood, the greenhouse gas reduction could be as high as 50%. Across the Victorian generation sector this huge opportunity for economically viable greenhouse gas reduction should not be ignored, bearing in mind the need for base-load power.

If carbon capture and storage is to be economically viable in the future it will require power station combustion designs that allow for its retrofit. This is because existing power station boilers rely on air for combustion, which 80% is nitrogen, and nobody would want to pay to pump nitrogen underground. Carbon capture requires oxy co-firing in a carbon dioxide rich atmosphere so that exhaust gases are pure carbon dioxide for capture. This requirement can

best be achieved through new builds rather than existing retrofits. Victoria is lucky to have the best known carbon capture storage site in Australia, in the nearby Bass Strait. An additional benefit of pumping carbon dioxide into Bass Strait would be the increased recovery of oil and gas improving economic returns for the capital outlay.

Zero greenhouse emitting, Brown Coal fired generation with carbon capture and storage, fuelled by an estimated 430 billion tonne Victorian resource, should be the long term goal to achieve cheap and reliable power to drive economic growth. What is preferable, very cheap zero carbon emission Brown Coal base-load generation or much more unreliable and expensive renewables?

The rapid growth of renewables in the National Electricity Market has seen a surplus of supply develop, with about 1,000 MW of spare capacity in Victoria during the summer peak and up to 3,000 MW of spare capacity at other low demand periods. Despite this surplus there is still considerable dispatch of Brown Coal generators to supply the other states of Tasmania, South Australia and New South Wales.

Tasmania has recently experienced a state electricity supply emergency when the Basslink cable from Victoria failed and South Australia experienced a state electricity supply emergency with a state wide blackout after a storm, highlighting that both are heavily dependent on Victorian supply. New South Wales is also a heavy importer of cheap Brown Coal power due to much higher Black Coal prices.

Latrobe Valley Power Industry

Located in the Latrobe Valley are the following power stations:

Brown Coal fired:		
Loy Yang A power station	4 Units	2210 MW
Loy Yang B power station	2 Units	1026 MW
Yallourn power station	4 Units	1552 MW
Hazelwood power station	8 Units	1600 MW
Gas fired:		
Jeeralang open cycle gas turbines	7 Units	460 MW
Valley Power open cycle gas turbines	6 Units	300 MW
Total Latrobe Valley Generation:	31 Units	7148 MW

In total, the Latrobe Valley supplies about 90% of Victoria's electricity demand.

In addition to the above power stations are the following open cut Brown Coal mines:

Loy Yang Coal Mine	30 Million tonne p.a.
Yallourn Coal Mine	17 Million tonnes p.a.
Morwell Coal Mine	15.3 Million tonnes p.a.

In terms of direct employment, the estimated jobs at each operation is:

Loy Yang A power station & Loy Yang Mine	570 employees	100 contractors
Loy Yang B power station	150 employees	30 contractors
Yallourn power station & Yallourn Mine	200 employees	150 contractors
Hazelwood power station & Morwell Mine	500 employees	300 contractors

Latrobe Valley Social and Economic Conditions

The Latrobe Valley's economy is heavily dependent on the local power industry and the Maryvale Paper Mill, the largest paper mill in the southern hemisphere for employment. The Maryvale Paper Mill employs in excess of 1,000 employees. During the 1990's the Victorian power industry was privatised and the State Government received $22 billion in asset sales. While all Victorians benefitted from these asset sales, the Latrobe Valley community bore the brunt with 7,500 direct jobs lost and an economic and social disaster.

There was no State Government transition plan for the Latrobe Valley to mitigate the effects of privatisation nor was there any substantial economic assistance provided. Previous governments simply abandoned the Latrobe Valley.

Over the past 25 years the only new power station build in the Latrobe Valley has been the Valley Power gas turbines, with about 100 short-term construction jobs, but with only about 20 ongoing operational jobs. During that same period, in 2014, the Morwell Power & Briquette Factory closed with the loss of a further 60 jobs.

As of the present date Moe, Morwell and Churchill are still amongst the top 40 most disadvantaged towns in Victoria, with unemployment in the Latrobe Valley running at 7.0% (14.7% in Moe and 19.7% in Morwell) against the state average of 5.8%. Latrobe Valley youth unemployment is even higher than this.

Pending Closure of Hazelwood Power Station

ENGIE, the owners of Hazelwood power station and Morwell Mine are publically on record as saying they will either sell or close Hazelwood power station by year end. The age, condition and rehabilitation costs of the Hazelwood power station site make a sale most unlikely. This has led to considerable media speculation that Hazelwood power station will either fully or partially close in the very near future, possibly as early as 1 April 2017.

The closure of Hazelwood power station will see the loss of about 800 direct power industry jobs which will be devastating to the already socially and economically depressed Latrobe Valley community. A Committee for Gippsland Report estimates that there is a job multiplier effect of 2.265 for each power industry job lost in the Latrobe Valley. If this is true the closure of Hazelwood would see 1,812 jobs lost across the Latrobe Valley.

The wages of the Hazelwood and contractor workforce are in excess of $100 Million p.a. The Committee for Gippsland estimates a multiplier effect of 1.88 for economic activity in the Latrobe Valley. This means the Latrobe Valley community is facing an economic shock in excess of $188 Million p.a. if the multiplier is correct.

A major concern for Victoria is that there is only a surplus in electricity supply over the summer peak of about 1,000 MW. The loss of the entire Hazelwood's 1,600 MW of generation output is likely to risk potential Victorian power shortages over the summer period, and if not, result in astronomically high wholesale power prices.

There appears to be little system planning for future closures of Victoria's aging power stations. For example, if Yallourn were to suddenly close in addition to Hazelwood, the additional loss of 1,552 MW would lead to power blackouts over summer and shortages year round, including a dramatic rise in power prices for all Victorian consumers.

Future Closure of Yallourn Power Station

While the closure of Hazelwood power station will assist Yallourn power station to run longer because of resulting higher wholesale power prices and profitability, it too is aging and has a limited coal reserve available to it. It is expected that Yallourn power station will also close within the next decade. When Yallourn closes this will bring to a total of 3,000 MW of cheap, reliable Brown Coal base-load generation lost from the Victorian power grid. As power demand is expected to grow slowly over the next decade, a crisis point is looming if no new base-load generation is built.

CFMEU Transition Policy

1. Industry Wide Redundancy Scheme

To mitigate the loss of 800 jobs at Hazelwood, and Yallourn in the future, the CFMEU believes an industry wide redundancy scheme needs to be established. Such a scheme would incentivise older workers at newer power stations to retire early so that younger workers could re-deploy into their positions. The advantages of such a scheme are many.

For older workers they could retire early, and remain living in the Latrobe Valley to maintain the population and its economic activity. With some early retirement assistance and substantial superannuation savings, these workers would provide long-term spending and economic activity within the Latrobe Valley community.

Younger redeployed workers and their families would also be retained within the Latrobe Valley population, thereby continuing to contribute to its economic and social well-being. The Latrobe Valley power industry would benefit from these young skilled workers being redeployed to maintain its longevity. Re-deployed workers can also be trained much more quickly and at a much lower cost than for other replacement workers from outside the industry.

While an industry wide redundancy scheme may not mitigate all the effects of the closure of Hazelwood power station, it would go a long way, but to be successful the scheme must have the support of State and Federal Government and the generation companies. I believe the Unions and Community already strongly support such a scheme being established.

A change would be required; however, for the Federal Government to allow redundancy across the entire Latrobe Valley regional industry for tax purposes. This is because retiring workers would be replaced and this would not constitute a "redundancy" under current ATO tax law.

The scheme would require funding by State and Federal Government, as well as the generating companies who profit from closures. Upon closure of power stations, the reduced power supply shifts the price curve so that higher wholesale electricity prices result. This price rise may potentially double the remaining generators profit, bringing windfalls of as much as $100-$200 Million p.a. to some. Some of this windfall should be returned to the Latrobe Valley community through an industry transition scheme.

Likewise, the State Government recently raised Coal Royalties for Brown Coal. The CFMEU believes that at least one third of the Coal Royalty should be spent in the Latrobe Valley community where it is generated and an industry transition scheme would be a logical choice.

The CFMEU has taken a survey of the ages of our members at the Hazelwood power station and Morwell Mine. There are currently:

Hazelwood power station	47 members > 55 years	108 members < 55 years
Morwell Mine	52 members > 55 years	64 members < 55 years

Across the other generators there are currently possible retirement opportunities as follows:

Power Stations	125 members > 55 years
Coal Mines	97 members > 55 years

Thus in the operational fields the CFMEU believes that almost all those at Hazelwood power station and Morwell Mine could be re-deployed through a transition scheme that provided early assisted retirement across the Latrobe Valley industry. Suggested assistance would be 2 years current salary at age 55 years tapering down 1 year current salary at age 60 years or the redundancy entitlements under the company's Enterprise Agreement; whichever is greater.

Ideally the owners of Hazelwood power station would implement a phased closure over several years to ensure maintenance of Victoria's power supply and a progressive transfer of workers over time.

To be successful any industry transition scheme will need to be implemented by those affected. Ideally an implementation committee would be established with representatives from the power companies, unions, state and federal government. Funding for such a scheme should not be a lump sum but rather progressively funded over a number of years.

2. Green field Site Restoration

When power stations and mines close they leave a scare on the landscape that should be responsibly cleaned up so that the site is as it was before, a green field. There is currently legislation to ensure disused mines are rehabilitated but none for industrial structures. It would be a disgrace and a blight on the Latrobe Valley community if the asbestos laden Hazelwood power station were to remain for infinitum, with a ring fence and a couple of security guards.

The Latrobe Valley already has the old industrial relics in the Morwell Briquette Factory, the Coal to Oil site and the AusChar site as industrial relics, we shouldn't suffer any more. The demolition of Hazelwood and Morwell power stations would create hundreds of jobs over a considerable span of years to help smooth the job losses of while the Latrobe Valley power industry transitions. The skills to demolish a power station are all those that power industry maintenance workers currently possess, i.e. asbestos strippers, fitters, boilermakers, electricians, riggers, crane drivers, etc.

For demotion it needs to be mandated that local ex-power industry labour is used first before other local labour is sought and then, only as a last resort, should labour be sought outside the Latrobe Valley. It is important that demolition proceeds soon after power station closure to ensure that there is not a gap in employment opportunities for displaced power workers.

If there were to be a progressive closure of Hazelwood, then demolition would need to proceed while other parts of the plant is still running. This will bring a number of safety concerns especially in regards to asbestos stripping. The only way safety will be well managed is for there to be a unionised demolition workforce and union safety representatives.

3. Coal Mine Rehabilitation

There will be a requirement to rehabilitate the disused Brown Coal Mine after Hazelwood power station closes. It is important that all coal surfaces are capped with clay to prevent any possibility of a major coal fire, within the disused mine, in the decades ahead. The CFMEU believes local labour should be used to perform this work progressively over a number of years rather than bringing in a major external contractor to perform the work quickly. This strategy will ensure greater continuity of employment for Latrobe Valley workers and local contractors O&M and RTL already perform earthworks in the Morwell Mine and are more than capable of performing this work.

4. New Energy Efficient Brown Coal Base-Load Power Stations

Victoria will need new base-load power in the future to replace the aging Hazelwood and Yallourn power stations. Any major power station build has a ten year lead time from the time of the decision to build through to its commercial operation. It is vitally important that this lead time be considered in planning to replace base-load generation. If Victoria does not replace base-load generation then it exposes itself to the risk of blackouts, extreme power prices and unstable power systems for extended periods of up to several years.

As mentioned earlier the most modern designs of coal fired power stations would halve the greenhouse gas emissions currently put out by Hazelwood and Yallourn and are readily available for construction. This option should not be dismissed through an "all or nothing" attitude towards coal.

Perhaps a more forward thinking option would be to invest in the IDGCC design previously proposed by HRL. The advantage of this design is relatively low capital cost combined with suitability to retrofit for carbon capture and storage.

New power station builds will secure Victoria's electricity supply for the future, make good use of Victoria's vast Brown Coal reserve, reduce current greenhouse gas emissions and make for long-term jobs growth within the Latrobe Valley.

5. Carbon Capture & Storage

Carbon capture and storage is the way forward for Victoria to exploit its Brown Coal resource, while at the same time protecting the environment. There is currently a 100 MW operational power station in Canada called 'Boundary Dam' that has been retrofitted with carbon capture and storage and it receives additional revenue from oil companies, which is very similar to the opportunities Victoria has with the nearby Bass Strait geological carbon sink.

A new build coal fired power station design for carbon capture would be the first step towards making carbon capture and storage a commercial reality.

6. Alternative Uses for Brown Coal

With the vast Brown Coal reserves it would be negligent not to explore other uses for Brown Coal outside of electricity generation. This reserve could one day potentially be Australia's primary source of oil, diesel, fertiliser, plastics, pharmaceuticals and other products. Unfortunately research in this area and public investment has been previously hijacked by "snake oil" salesmen leading the community to question the value of these investments.

The CFMEU's view is that it is vital for this research to continue but that all research should be co-ordinated through the local Federation University. This will provide opportunities for the development of local expertise and diversification of the Latrobe Valley economy. The real issue is that government needs to properly screen projects for commercial viability prior to providing funding rather than just cutting all funding.

7. Latrobe Valley Industry Diversification

The Latrobe Valley's reliance on the power industry and the paper mill will always make it vulnerable to the decisions of private companies. The only long-term solution is to encourage alternative industries to set-up in the Latrobe Valley.

The CFMEU believes that it is pointless setting up industries that do not complement existing Latrobe Valley skill sets. For example: the Latrobe Valley has highly paid jobs operating and maintaining process industries. It would be less effective to bring a manufacturing industry to the Latrobe Valley rather than a process industry. The types of industries that would best complement the Latrobe Valley are oil & gas processing, chemical processing or other process industries.

If we do not intend to exploit our Brown Coal reserves then an export industry should be considered so that Victorians are not deprived of its economic value. This would necessitate a large high volume coal drying plant for viability, which is an ideal process industry for the Latrobe Valley skill set.

Estimated Victorian Brown Coal reserves are 430 billion tonnes, with about 65 billion tonnes in the Latrobe Valley and 33 billion tonnes easily accessible. There is potential to export 100 million tonnes of Brown Coal p.a. for the next 330 years. This is too large an economic opportunity to ignore. At $20 per tonne shipped this would be a $2 billion annual export industry for Victoria for the next 330 years. Given that the Black Coal export price currently sits around $A92 per tonne this industry would have a significant competitive advantage.

Conclusions

To ensure a "just transition" for the Latrobe Valley, the CFMEU believes that three immediate and practical actions need to be taken by government:

- Implement a Latrobe Valley wide industry transition scheme
- Ensure the demolition of the Hazelwood and Morwell power stations
- Progressively rehabilitate the Morwell Mine

Additional medium term measures should be a cutting edge design, new build Brown Coal fired power station. This will not only be required to maintain Victoria's power supply and system security in the future but will generate jobs growth in the Latrobe Valley and avoid the need to go nuclear for base-load power.

Any new build coal fired power station should be built with carbon capture and storage in mind in order to make use of the ideal geological carbon sink in Bass Strait thereby increasing its economic viability through increased oil and gas production.

Last but not least, alternative uses for the vast Brown Coal resource needs to continue to be explored, as does alternative process industries for the Latrobe Valley. An ideal process industry could be a huge coal drying plant to enable a viable export industry for Brown Coal.