



NSW Coal & Gas Strategy

SCOPING PAPER

February 2011

Introduction

In July 2010, the Government formed a Ministerial Sub-Committee to lead the development of a Coal & Gas Strategy for NSW.

This Sub-Committee comprises the Ministers for Planning (Chair), Primary Industries, Health, Climate Change and the Environment, and the Treasurer.

The main aims of the Strategy are to:

- Guide the sustainable development of the coal mining and coal seam gas industry and associated infrastructure;
- Minimise the adverse health, environmental, agricultural and land use impacts of the industry;
- Ensure the industry is regulated efficiently and effectively; and
- Strengthen the communication between Government, industry and the community on mining-related matters.

This Scoping Paper has been prepared to:

- Provide a brief overview of the coal and coal seam gas industry, its place in the State and regional economies, and its potential growth prospects over the next 25 years, especially in response to the expected increase in global energy demand;
- Identify the key environmental, economic, social, and health issues likely to be associated with growth in the coal mining and coal seam gas industry, and initiatives already being taken by the Government to address these issues;
- Outline key additional initiatives that could be taken to manage this growth so the benefits are maximised and the costs and impacts minimised; and
- Promote community and stakeholder discussion to provide input to the development of the Strategy.

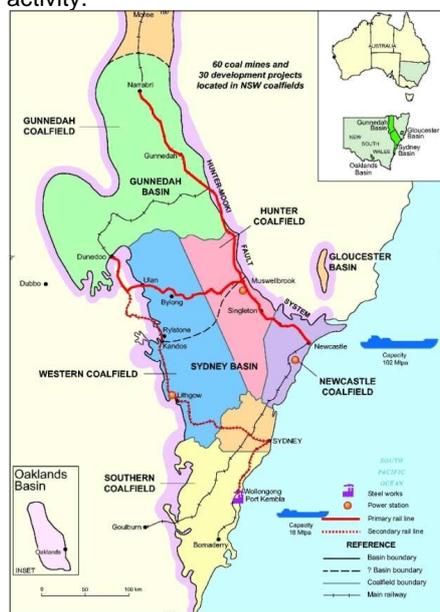
Coal and Coal Seam Gas in NSW

The coal industry comprises a large and mature coal mining industry, and a small but emerging coal seam gas industry. While the operations of the two industries are substantially different, there is significant scope for interaction between them. The locations of both industries are defined by the State's coal resources, and therefore they will have to operate in close proximity to each other, or within the same regions.

Consequently, there is merit in a single Strategy for both industries which will enable the potential interaction between the two to be properly considered and managed, including any potential cumulative impacts.

Coal

There are six main coal resource regions in NSW - Hunter, Newcastle, Gunnedah, Gloucester, Western and Southern as well as a number of smaller areas which have exploration titles but no current mining activity.



The industry produces mainly thermal coal (80% of total output) for use in power generation, and coking coal for use in the steel industry.

Over the past decade, coal production has grown steadily due to growing demand from Asian export markets. 65% of the coal produced in NSW was extracted from open cut mines. In 2009-10, NSW produced 145.4 Million tonnes of saleable coal, of which 109.9 Million tonnes or 75% was exported. NSW coal exports in 2009-10 were worth an estimated \$11.2 billion. Approximately 60% of the coal produced in 2009/10 came from the Hunter Valley.

The main domestic users of coal include eight power stations near Singleton (Bayswater, Liddell and Redbank), Lithgow (Mt Piper and Wallerawang) and on the Central Coast (Eraring, Vales Point and Munmorah); and steelworks at Port Kembla, and Whyalla (South Australia).

Infrastructure associated with coal includes railways, and port facilities at Newcastle and Port Kembla.

Coal seam gas

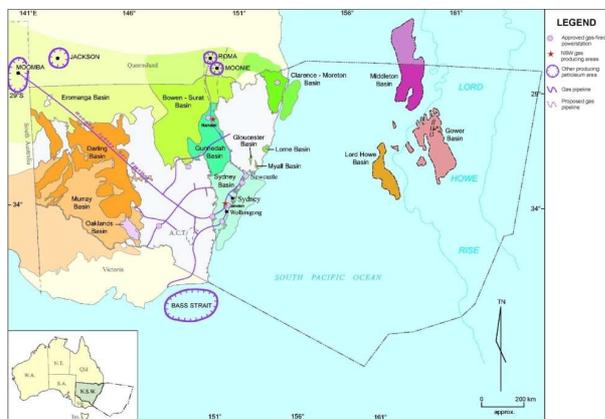
To date, NSW has imported gas for domestic use (residential, power generation and industry) from South Australia and Victoria.

Over the last decade, a domestic gas industry has begun to emerge in NSW, primarily focussed on extracting gas from deeper coal resources, and has been facilitated by improvements in technology, growing concerns about climate change, and the associated push to find alternative sources of energy.

The NSW coal seam gas industry is presently small, producing only 6% of the State's gas supply. Gas is produced in the Camden area, south west of Sydney and near Narrabri in the north west of the State.

However, there has been a significant increase recently in coal seam gas exploration, in the coal producing regions close to the existing regional pipeline network (Southern, Gloucester and Hunter) as well as Gunnedah and the Clarence-Moreton region. This exploration could result in a substantial increase in coal seam gas production over the next 25 years.

Gas has a critical role to play in NSW moving to a low carbon economy. It is the only conventional energy source that can underpin this transition in the timeframes envisaged under State initiatives for the reduction of greenhouse gas emissions.



Existing gas fields, production areas and pipelines

Economic significance

Coal mining is a significant contributor to the NSW economy, with total production worth some \$13.3 billion in 2009-10.

It supplies 92% of the State's electricity and also provides essential support to the steelworks at Port Kembla and the aluminium smelters in the Hunter.

At June 2010 the NSW coal mining industry employed 19,000 people. The industry indirectly creates up to another 70,000 jobs in mine and non mine related industries. Many regional towns and communities are dependent on these jobs.

The industry generates around 80% of the State's mining income and around 25% of its export revenue. Coal is the single largest export in revenue terms from the State. The value of NSW coal exports has more than tripled in the last decade. This will continue to grow, particularly with the increasing capacity in port facilities at Newcastle.

Coal mining currently makes a significant contribution to public revenue for the Commonwealth, State and local governments. Royalties generated from coal exceeded \$1.2 billion

in 2008-09 and are estimated to be close to a billion dollars again in 2009-10.

Emerging Community Concerns

As a consequence of the buoyancy of the industry, concerns are emerging within the broader NSW community about the amenity, health, environmental and land use impacts associated with the growth of coal mining and coal seam gas, including:

- Fundamental concerns about the use of coal, due to its contribution to global carbon emissions and climate change;
- Concerns about the cumulative impacts of mining (health and environmental), principally in the Hunter Valley;
- Concerns about the compatibility of mining with other land uses, manifesting in:
 - conflict between miners and food and fibre production farming in areas including the Liverpool Plains;
 - conflict between the mining and thoroughbred horse industry and vineyards in the Hunter Valley; and
 - opposition to mining in certain villages or urban areas close to mining exploration areas or mining proposals.
- Concern that open cut mining on the scale of mines in the Hunter Valley will occur in other regions where coal mining is an emerging industry, such as the Gunnedah, Gloucester and the Western Basins;
- Concerns about the subsidence impacts of mining, principally in the Illawarra Region, both on the natural environment (rivers, creeks, swamps, and other sensitive features), and consequently Sydney's water supply, and major infrastructure;
- Concerns over potential impacts from coal seam gas operations, particularly in relation to aquifers, waste water and chemical additives;
- Criticism of the environmental assessment of certain aspects of mining projects (particularly cumulative impacts), and the adequacy of the policies, standards and guidance provided by Government; and
- Concerns over industry compliance with conditions on planning approvals, environmental protection licenses and mining leases.

Government Initiatives to Address Community Concerns

In the last few years, the Government has implemented a range of initiatives to respond to community concerns, and improve the regulation of mining activities in NSW. These have included:

- A commitment to reduce greenhouse gas emissions by 60% by 2050, including a target of 20% renewable energy consumption by 2020, consistent with the Commonwealth's Renewable Energy Target;

- Establishment of the NSW Clean Coal Council which provides strategic advice on how best to support clean coal research and development in NSW;
- Establishment of a Clean Coal Fund, through which the Government is supporting a diverse range of carbon capture and storage projects aimed at commercialising low emissions coal technologies;
- Up to \$120 million towards a NSW-based project under the Commonwealth's Solar Flagships Program;
- Introduction of the Part 3A project assessment process under the Environmental Planning and Assessment Act 1979, and associated reforms requiring all mines operating without a current development consent to obtain a planning approval by the end of 2011;
- Enacting amendments to the Mining Act 1992 to expand the scope and enforceability of its environmental management and rehabilitation provisions;
- The rehabilitation of a number of derelict mines under the Derelict Mines Program - an ongoing program which undertakes rehabilitation works to address environmental and safety issues at derelict mines;
- Improvements to the calculation of security deposits for mining and petroleum titles, the current value of which is \$1.23 billion (as at 31 October 2010); and
- Preparation (by the Department of Planning) of key strategic assessment documents to improve preliminary information on the acceptability of coal mining in key locations. These include:
 - the *Strategic Assessment of Coal Mining in the Upper Hunter Valley*, principally in response to concerns about the Bickham Coal Project;
 - *Southern Coalfield Inquiry*, which investigated the subsidence-related impacts of underground mining in sensitive areas such as Sydney's drinking water catchment;
 - the *Impacts of Potential Underground Coal Mining in the Wyong Local Government Area*, principally in response to the Wallarah 2 Coal Project; and
 - the *Camberwell Cumulative Impact Study*, an independent expert review that looked into the cumulative impacts of noise and dust in the Hunter Valley.

The Government is also developing or carrying out a range of initiatives to either address community concerns or improve the regulation of mining in NSW.

These initiatives include:

- The Namoi Catchment Water Study, a baseline groundwater study in the Gunnedah region, which is being co-ordinated by Industry & Investment NSW;
- Assessment of the health risks from power generation and open cut coal mining in the Hunter Valley by NSW Health's Expert Advisory Group on Air Pollution;
- Implementation of a regional air quality monitoring network in the Hunter Valley, co-ordinated by the Department of Environment, Climate Change and Water (DECCW);
- A study of international best practice for dust mitigation in mining, commissioned by DECCW;
- The location of a team of Department of Planning compliance officers in the Hunter Valley to oversee the compliance and regulation of mining operations there;
- Introducing tough new rules for coal seam gas exploration licenses – including rigorous community consultation and tighter environmental controls during the approval process, and key Government Agencies being involved from the beginning; and
- A joint DECCW/ Department of Planning/ Industry & Investment NSW compliance audit of dust generated by coal mines in the Hunter Valley

Coal and Gas Industry Prospects

The future of the NSW coal industry is tied to global energy demand, which is predicted to increase by up to 60% over the next 25 years. Two thirds of this demand is expected to come from developing countries.

Even with significant growth in the use of gas and renewable energy, and the potential introduction of carbon trading or emissions trading schemes, the International Energy Agency (IEA) (under the auspices of the OECD) predicts that coal as a source of energy will remain much the same in relative terms, but that there will be a significant proportional increase in the use of gas, as shown in the table below.

Forecast sources of energy to 2030

Fuel Source	2002	2030
Coal	39%	38%
Gas	19%	30%
Nuclear	17%	9%
Hydro	16%	13%
Oil	7%	4%
Other*	2%	6%

Other = solar, wind, renewables, geothermal, waste
Source: IEA, *World Energy Outlook 2009*

Over the coming decades, therefore, coal exports from NSW could increase substantially. This will generate significant economic growth in regional areas of the State, along with associated issues for the entire coal chain, commencing at the coal producing areas and ending at the ports.

In addition, there could be a substantial expansion of the coal seam gas industry, initially to supply a greater share of the domestic market, but ultimately

for export. This will require substantial investment in pipelines, processing plants and port facilities. Where possible, and environmental impacts can be successfully managed, the Government prefers gas pipelines to be laid in utility corridors such as road corridors or travelling stock routes.

Australian Government policies could impact on the future of the NSW coal and gas industry. These policies include, for example, the Minerals Resource Rent Tax, the planned introduction of a carbon price, and matters arising from the Australian Government's *Environment Protection and Biodiversity Conservation (EPBC) Act*.

Future Growth Areas and Issues

Preliminary assessments indicate that most of the growth in the coal and coal seam gas industries over the next 25 years is likely to occur in the northern parts of the State: in the Hunter Valley, the northern part of the Western Basin, and the Gunnedah Basin. These changes will require upgrades to rail infrastructure linking these areas to the Port of Newcastle; and the coal loading capacity at the port.

The Hunter has the capacity to contribute between 40% and 60% of the additional potential coal output, with the Western and Gunnedah Basins contributing equally to the remaining potential output. Mine capacity to meet approximately 30% of predicted additional output is already in place in the Hunter.

The Illawarra region is expected to experience modest incremental growth in coking coal output for the local steel industry and for the export market.

The southern part of the Western coal resource area will continue to supply coal to the power stations near Lithgow, and to a limited extent export markets. The Newcastle and Gloucester areas will continue to supply coal to the power stations on the Central Coast, as well as export markets. As these areas are not likely to expand significantly, they have not been separately considered in this Scoping Paper.

Hunter Valley

Further development of the coal industry in the Hunter Valley is likely to be focused on:

- Continued expansion of mining operations in the area between Singleton and Muswellbrook; and
- Gradual expansion of open cut and underground mining into the area to the north and northwest of Muswellbrook, towards Denman and beyond.

There is also likely to be some coal seam gas development in the area to the south of existing mining operations, for example, coal seam gas exploration is currently occurring in the Broke area.

The intensification of mining in the area between Singleton and Muswellbrook will require the careful management of potential cumulative impacts in an area that already accommodates substantial coal mining activity.

The expansion of mining to the north of Muswellbrook has the potential to create land use conflicts between mining and other rural land uses (horse studs, vineyards, etc), and will need to be carefully managed to avoid impacts on the amenity of Muswellbrook, Denman and Aberdeen.

Key issues

- **Improving the management of cumulative impacts** – particularly in relation to potential dust, noise and blasting impacts of mining operations.
- **Protecting the amenity and health of people living in the population centres** – one of the key issues will be managing mining operations adjacent to population centres.
- **Mining and coal seam gas land use conflicts with other industries and land uses** – particularly in relation to agricultural land, vineyards, the horse breeding industry and proximity to residential areas. This could involve some detailed cost benefit analysis of the relative merits of these potentially conflicting land uses, including consideration of differing staging timeframes and identifying opportunities for the development of compatible industries.
- **Biodiversity** – due to past clearing, limited areas of biodiversity remain within the valley floor where most of the open cut coal mining activity occurs. Opportunities for biodiversity offsets are limited. Accordingly, opportunities to improve biodiversity are required.
- **Mine Rehabilitation** – expansion of open cut mining will increase the area of land disturbance. Progressive and integrated rehabilitation planning is required to ensure optimal landscape outcomes and future uses are achieved.
- **Water** – there is growing community concern about the impact of mining on alluvial aquifers and water resources, the impact of coal seam gas extraction on aquifers, and the treatment and disposal of waste water.
- **Rail** – increased mining output will require upgrades to the rail network. Detailed plans have been prepared by Australian Rail Track Corporation (ARTC). This expanded rail network and increased movement of coal has the potential to affect the amenity of towns along the rail route. Additional crossings and bridges will also be required to minimise impacts on regional roads. The responsibility for railway crossings requires clarification. Some communities are also calling for coal trains to be covered to reduce dust and spillage along the rail corridor.
- **Roads** – councils have raised concerns about the ability to fund necessary road upgrades.
- **Economic development** – perceptions exist within the community that the region has carried

the cost of coal mining while the broader State enjoys the benefits.

- **Planning for jobs and housing** – the expansion of the mining industry and the resulting number of mine employees should be taken into account in further growth projections and plans for the expansion of urban settlements and the required community infrastructure.
- **Aboriginal heritage** – substantial areas of indigenous heritage have been affected by coal mining to date.

Western coal resource area

Development in the Western coal resource area is likely to be focused on three distinct locations:

- The existing Moolarben-Ulan-Wilpinjong mining complex, and the potential expansion of this corridor to the east (Mt Penny and Bylong exploration licence areas), and potentially also to the south, where resources have been identified including the Rylestone area;
- The proposed Cobbora mine near Dunedoo, which could provide a significant proportion of the domestic coal supply over the next 20-25 years; and
- Incremental growth in the area around Kandos.

There is currently no major coal seam gas activity in the Western coal resource area.

The areas with the potential for growth are generally rural locations some distance from major population centres. However, they are close to a number of small villages. While the land is not considered to be prime agricultural land, there is the potential for land use conflicts with existing farming activities. Some of these areas adjoin National Parks or State Conservation Areas, and have intrinsic biodiversity values.

Key issues

- **Managing cumulative impacts at the Ulan-Moolarben-Wilpinjong mining complex** – this includes dust, noise and water management; upgrading Ulan Road; ensuring high quality rehabilitation; and implementing an agreed biodiversity offset strategy.
- **Managing the expansion of mining into new areas** – this includes improving the co-ordination of the release of any new exploration areas and requirements under existing exploration licences, and providing greater certainty to people living in the small villages in the region.
- **Biodiversity/Aboriginal Heritage** – in the medium to long term there may be some value in developing a strategic plan for these issues, similar to that proposed for the Hunter Valley.

- **Water** – this issue has been raised by the community, with calls for a study similar to the Namoi Water Study. The water impacts of mining in the area should be included in any environmental impact assessment.
- **Rail** – the growth of mining output in this area is likely to require upgrades to the railway line, principally along the existing east-west line to the main Northern Railway line. However, some coal may be transported to the south to the power stations around Lithgow or to export via Port Kembla. While the quantity of coal sent south is unlikely to be significant, there is the potential to result in coal being transported through towns such as Mudgee, which will need to be managed appropriately.
- **Roads** – the growth of mining will require upgrades to the regional road network, particularly in the area east of the Ulan-Moolarben-Wilpinjong mining complex.
- **Planning for Jobs and Housing** – expansion of coal mining will generate additional jobs and the need to house new employees. While most of this growth is expected to be felt in regional centres such as Mudgee and Dubbo, a clear picture of the likely jobs and housing growth and the required community infrastructure should be developed.
- **Economic Issues** – similar to the Hunter Valley, Mid-Western Regional Council has raised the need for community enhancement packages on individual projects.

Gunnedah Basin

Development in the Gunnedah Basin is likely to be focused on three distinct areas:

- The existing Narrabri mine in the north-western part of the Basin;
- The area around the Leard State Forest, which could become a major open cut mining complex within the next 10 years;
- The areas on and adjacent to the black soil plains north west of Quirindi, where the Caroon and Watermark exploration licence areas are located; and
- The areas near Narrabri and along the western side of the basin where there is the potential to develop export-scale coal seam gas operations.

While this growth will represent an increase over current production rates, coal mining is expected to be a relatively minor land use within the broader basin. The issues associated with this development will vary substantially across the region. For instance, some areas will be mined by open cut mining methods (such as the Leard State Forest), while other areas will be mined predominantly by underground methods.

Due to the geology of the Gunnedah Basin, coal mining would be restricted to areas where the coal is located and would not occur over the whole basin.

Key issues

- **Management of the potential cumulative impacts of mining in the Leard State Forest area** – this includes working closely with the various mining companies to ensure a co-ordinated approach to key issues such as mine design, rehabilitation, biodiversity, forestry operations, and minimising cumulative dust, noise and blasting impacts.
- **Managing the potential expansion of mining under and adjacent to the black soil plains** – concerns have been raised about the potential loss of productive agricultural land, especially in food producing areas, as well as disruption to farming communities and lifestyle.
- **Managing the expansion of coal seam gas development** – this relates particularly to minimising surface disturbance and appropriately disposing of water generated as part of the coal seam gas development. Best practice water management to address saline water produced during gas extraction, including opportunities for beneficial re-use, must be examined.
- **Potential effects on aquifers** – this is recognised as an important issue for the Gunnedah region, where groundwater is central to food production agriculture.
- **Rail** – an upgraded rail link from the Gunnedah region through the Liverpool Ranges to the Hunter Valley rail network is required. Options are being considered by ARTC.
- **Biodiversity** - the region contains areas of high biodiversity value including important white box vegetation.
- **Loss of agricultural land and mine rehabilitation** – mining can affect productive agricultural land. Ways to ensure there is no net loss of agricultural land in the region should be considered.
- **Planning for Jobs and Housing** – expansion of coal mining will generate additional jobs and the need to house new employees. A clear picture of the likely future jobs and housing growth and required community infrastructure should be developed.

Illawarra

While the Illawarra is expected to see only incremental growth in coal mining over the next 25 years, much of this growth is likely to be close to Sydney's drinking water catchments which also have areas of high conservation value. There are also ongoing coking coal exploration programs in

the broader Illawarra area, for example, near Sutton Forest. In addition, coal seam gas exploration and production (for example, near Camden) continues to grow. This growth will need to be managed appropriately.

Key issues

- **Managing subsidence impacts on natural and built features** – there is a long history of preventing and managing subsidence impacts on built features. However, the management of operations to prevent or minimise impacts on natural features is still developing.
- **Water** - there is concern regarding impacts on water quality and quantity, particularly in respect of swamps, watercourses and dams within drinking water catchments.
- **Disposal of coal rejects** – the growth in mining will generate additional coal rejects waste. There are constraints to the disposal of rejects in the region, as the mines are generally in sensitive areas with high conservation values.
- **Transport** – due to the constraints in the existing rail network, a large share of the coal produced in the Illawarra will continue to be transported by public road to Port Kembla.
- **Demand for Land release** - the value of coal resources beneath Macarthur South has been one of a number of reasons affecting land release in the Macarthur South area.

Coal Seam Methane Gas

There is likely to be coal seam methane gas development in most of the main coal mining areas as well as the Clarence-Moreton Basin in the north of the State. Due to its geology and underground gas reserves, the Hunter Valley and the Gunnedah Basin are expected to be the focus for the majority of the coal seam gas extraction. Future development will require new pipeline infrastructure or upgrades to existing pipeline infrastructure. Opportunities to expand gas production have also led to interest in the development of an export gas terminal at Newcastle, which will also need associated pipeline infrastructure.

The additional activity and employment opportunities will generate further demand for residential land, and associated industrial land in towns close to the extraction areas, as well as human support services and utility infrastructure.

Key Initiatives of the Strategy

Overall, the Strategy will address four areas:

- **Facilitate sustainable development** of the coal mining and coal seam gas industries and associated activities;
- **Identify and minimise any adverse health, environmental and land use impacts** associated with development of the industry;

- Ensure the **industry is regulated efficiently and effectively**; and
- **Strengthen the communication** between Government, industry and the community on mining-related matters.

In addressing the most pressing issues associated with coal mining and coal seam gas exploration, the key priority initiatives for the Strategy include the following:

1. Defining the potential growth of the industry

The Strategy will identify and map the potential growth of the industry over the next 25 years including the likely geographic distribution of this growth in NSW.

This will identify:

- The location of potential mining and gas extraction areas;
- Potential resource deposit size and annual yield or output;
- Expected timing of commencement, and extraction period.

2. Improved management of potential land use conflicts

Coal mining and other industries and land use activities can and do co-exist. However, in some areas there may be the need for choices to be made.

Triple bottom line, cost benefit analysis incorporating social, environmental and economic costs and benefits could be carried out in particular regions where coal mining or gas extraction may have the potential to displace or adversely impact other high value existing land uses.

Areas where a cost-benefit analysis of competing land-uses could be carried out include the Gunnedah Basin where intensive food production occurs, in the Singleton-Scone area where horse studs and wineries have located, and in the area between Singleton and Muswellbrook where significant growth may occur.

The cost benefit analysis could assess economic, environmental and social issues including health associated with each land-use.

The cost benefit analysis could be used to make decisions about whether coal mining should be allowed to move into new areas or what scale of coal mining activity may be appropriate to ensure the continued existence of other valuable industries.

3. Improved management of impacts

Impacts of coal mining are currently largely assessed and managed at a project level (ie mine site level).

The projected growth in coal mining and gas extraction activity warrants an assessment of the likely cumulative impacts, particularly in the high growth regions. This should be based on the

anticipated amount and rate of coal mining growth. Strategic environmental assessment (SEA) is a tool that would be suitable for this work.

SEA could be used, for example, to:

- better predict and manage the cumulative dust impacts from mining in the Hunter Valley by conducting a regional scale airshed assessment; and

identify the scale and staging of future mining in key locations to identify required infrastructure upgrades.

4. World's best practice dust and air quality management

Dust management is an issue for all open cut mines, especially when in proximity to established or planned settlements, or other sensitive receivers or land uses.

Dust predominantly comes from haul roads and other operational areas. Measures are in place to mitigate the effect of dust on air quality, including dust conditions and controls on coal mines, and the placement of mining compliance officers with the Department of Planning, based in Singleton.

The NSW Government is currently undertaking research on world best practice in dust management for mine operation and rehabilitation stages. Key locations where dust and air quality management warrant consideration include the potential mining growth areas around Muswellbrook and Singleton, as well as other locations where mining will take place in close proximity to towns, relative to the effects of prevailing winds.

Specific tasks could include:

- Establishment of an ambient air quality monitoring network;
- Defining best practice dust management to prevent and or minimise dust emission from mine sites; and
- Ensuring all reasonable and feasible measures are implemented on mine sites to reduce dust emissions.

5. World's best practice mine/ land rehabilitation

High quality, progressive rehabilitation should be required for all mines.

There are examples of best practice rehabilitation in NSW which should be used as the benchmark for future mines, and this will be progressed as part of the Strategy.

Rehabilitation guidelines are currently being developed which require detailed, upfront planning of both long-term and short-term objectives and detailed completion criteria for each stage of rehabilitation, to determine the success of rehabilitation.

In addition, the Strategy could develop an integrated regional approach to setting rehabilitation

objectives, which would help achieve improved landscape function and future use, biodiversity outcomes and visual outcomes in key areas of the public domain.

The mine rehabilitation strategy could address matters such as:

- An audit of key visual locations (eg in nearby towns, road corridors, elevated public land) where visual impacts need to be addressed;
- Identify suitable landforms for future rehabilitation areas to address their visual character and ensure landscape outcomes can be achieved.

6. Community facilities and services in the regions

In response to concerns about the lack of benefit to regional communities from coal mining, an assessment could be carried out that reviews the supply of public services and facilities in key regional centres within coal mining regions, and benchmarks these against comparable settlements in non-mining regions. The assessment could also identify where local areas have received long term benefits from mining.

This assessment could focus on the availability of public services and facilities, including:

- Health
- Education
- Transport
- Public recreation
- Community facilities etc

The Strategy will also form the basis for identifying the housing and employment needs of regions and ensuring councils have sufficient zoned and serviced land available to accommodate population increases.

Links to the Department of Planning's regional strategy program can occur as part of this exercise to ensure the broader needs of mining regions are addressed.

The preparation of guidelines to assist local councils and mining companies in the negotiation of Voluntary Planning Agreements for community enhancement funding could also occur.

7. Infrastructure planning

Expansion of coal mining and gas extraction will require improvements to transport infrastructure and coal gas distribution infrastructure.

The Strategy will work with industry and local councils to identify key built infrastructure such as road, rail and port facilities required to facilitate growth of the coal industry and how these will be funded and provided, including the proportion to be paid by industry and government.

8. Strategic biodiversity planning

Strategic regional biodiversity plans (including biodiversity offset programs) could be investigated in areas where potential resource extraction may affect areas of high biodiversity conservation value.

For example, a more strategic approach to biodiversity offsets in the Hunter Valley, including the role of the Australian Government under the Environment Protection and Biodiversity Conservation (EPBC) Act and the possibility to align approvals through a strategic assessment, may be warranted. DECCW is currently developing this option.

A strategic biodiversity approach may also identify areas in which coal mining or gas extraction should be avoided and where rehabilitation objectives should be driven by biodiversity outcomes.

9. Water resource management

A policy on surface and groundwater management, including aquifer interference (flagged with the full commencement of the Water Management Act) could be prepared.

Strategic baseline data on water resources could be developed, building on the Namoi Water Study currently underway. The Government could seek a financial contribution from mining companies for the development of the water resources database.

Specific tasks at a regional or sub regional scale could include identifying:

- The location and nature of mining (and gas extraction);
- The nature of surface water and ground water resources;
- Potential impacts of mining (and gas extraction) on surface water and ground water;
- Measures to ensure access to adequate water for surrounding land-uses;
- Measures to avoid impacts to water that may be detrimental to surrounding land-uses;

10. Strategic Aboriginal Heritage assessment

A more strategic approach to managing the impacts of coal mining on Aboriginal heritage is warranted.

The Government is exploring options for a strategic regional assessment of Aboriginal Heritage in the Upper Hunter.

A strategic regional assessment in key areas could inform and provide context for the assessment of Aboriginal Heritage at individual mine sites. Any assessment would be undertaken in collaboration with the Aboriginal Community.

11. Subsidence management

In areas of underground mining such as the Illawarra, land subsidence is a key issue, both on natural resources and built infrastructure.

Whole-of-government subsidence guidelines need to be developed to better identify potential sensitivities to subsidence impacts and to ensure

that underground coal mines avoid unacceptable subsidence risks and impacts.

This would be particularly valuable in areas to the south and south-west of Sydney where underground coal mining occurs close to water catchments and key transport infrastructure.

The coal industry has indicated an interest in carrying out a cumulative impact or strategic assessment of mining in the sensitive parts of the resource area.

12. Regulation and standards

While the coal mining industry is one of the most strictly regulated industries in NSW, there is scope to improve the regulatory regime to ensure:

- The planning approval process is as streamlined as possible, particularly where areas are identified in the Coal & Gas Strategy and/or cumulative impacts are understood;
- The granting of exploration licences for coal and coal seam gas over new areas is appropriate;
- There is transparency and early identification of issues at the exploration licence phase before moving to the planning approval phase;
- Environmental standards for exploration and mining are clearly defined and transparent;
- Current health and environmental standards are effectively integrated into the planning approval process; and
- There is a high level of compliance and that auditing of coal mines and coal seam gas projects is effective and well communicated.

In parallel with the initiatives outlined above, the Strategy will be pursuing essential regulatory and policy reform that will address environmental, health, infrastructure, and planning issues.

It is apparent that the regulatory regime for coal seam gas exploration and production poses some particular issues which need to be addressed. This would be in addition to the new rules for coal seam gas exploration license approvals introduced in December 2010, which include key Government agencies being involved up-front in the process.

13. Improving communication

Industry must take a strong lead in engaging with communities.

Consultation on coal mining and coal-related gas activities in NSW occurs at several steps, through both statutory and non-statutory processes. These are linked primarily to development proposals and development assessments.

The Coal & Gas Strategy will develop a range of potential initiatives to improve communication between the Government, industry, the community and other key stakeholders including:

- Stronger co-ordination and regulation of the industry within Government;

- Stronger links between Government, industry and key stakeholders;
- Improvements in the consultation between industry and the community; and
- Improvements to the transparency of the industry, and public access to key information.

Benefits of these initiatives

A considered suite of initiatives can provide greater certainty:

- For local communities in the vicinity of key growth areas, that the full range of impacts of coal mining and coal seam gas extraction are being addressed in a consistent and co-ordinated way, through the application of world best practice;
- For the industry, so that it can plan for investment in resource extraction and also continue to meet the energy demands of NSW residents;
- For the Government and the community, that it is achieving a sustainable return on its investment from the extraction of coal and gas; and
- For the environment, that an appropriate balance is being struck between protection of important environmental attributes and the use of coal and gas resources.
- For other primary industries, such as agriculture, achieving certainty and a sustainable balance of land use.

How the Strategy is being prepared

The Department of Planning is leading the preparation of the Strategy with assistance from all key Government agencies (Treasury, Health, Environment, and Industry and Investment NSW), as well as community, industry and other stakeholder input.

The Strategy will be developed based on input from the Scoping Paper consultation.

Have your say

This Scoping Paper has been prepared to encourage community and industry feedback on the directions and issues to be addressed in the Coal & Gas Strategy.

If you have any suggestions on ways that the planning, regulation and communications around coal mining and gas exploration can be improved, the Government would like to hear from you.

Feedback on this scoping paper or the proposed Coal & Gas Strategy may be provided by making a submission in the following ways:

Email: coalandgasstrategy@planning.nsw.gov.au

Letter: Coal & Gas Strategy
Department of Planning
GPO Box 39 SYDNEY NSW 2001

Closing date - Friday 15 April 2011.

NSW Coal & Gas Strategy – Scoping Paper - 2010

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