PART A

Introduction

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1 INTRODUCTION

'*It is widely recognised in the practice of environmental impact assessment that strategic or "big picture" approaches, rather than case by case assessments, can lead to more efficient planning and better environmental outcomes.*' (EPA 2012b)

1.1 Background

Commonwealth and state governments are seeking 'landscape-scale' environmental assessments where possible, and BHP Billiton Iron Ore Pty Ltd (BHP Billion Iron Ore) supports that aspiration. BHP Billiton Iron Ore has been operating in the Pilbara for over 50 years and has a wealth of environmental data and operational experience and knowledge. Having devised its potential future development plans, BHP Billiton Iron Ore is well placed to consider regional opportunities for environmental management. In line with its core value of Sustainability, BHP Billiton Iron Ore aspires to continually improve its environmental management practices. This is a key driver behind the decision to pursue a strategic proposal.

The Environmental Protection Authority (EPA) has identified the following benefits of strategic proposal assessments (EPA 2012b):

- the early consideration of environmental issues providing the ability to influence detailed design of future proposals;
- the ability to consider the cumulative impacts of more than one proposal;
- greater certainty for local communities regarding the maximum extent of cumulative impacts of future developments and greater confidence for proponents of future developments;
- more flexible time frames for consideration of environmental issues; and
- potential efficiencies in the approvals process.

Further, EPA (2012b) also suggests that strategic proposals may provide the community with the added advantage of being consulted at an earlier stage in the planning of future proposals, providing increased opportunity to influence the detailed design of future proposals.

BHP Billiton Iron Ore is committed to engaging its host communities and interested key stakeholders on potential future plans. BHP Billiton Iron Ore has a long history of engaging through community and industry consultative groups in the Pilbara and through other mechanisms. The strategic proposal approach supports this by involving communities early in the environmental approval process. Pilbara residents in particular will have more information and be able to provide more informed comment during the consultation process. Obtaining a strategic proposal provides greater certainty for the Pilbara community and allows other stakeholders to conduct more informed long-term planning for their own organisations and operations in the region.

To initiate the strategic environmental assessment process, BHP Billiton Iron Ore lodged a Strategic Proposal Referral Document with the EPA on 6 July 2012 under s. 38 of the *Environmental Protection Act 1986* (BHP Billiton Iron Ore 2012). Following public comment, the EPA announced on 25 July 2012 the decision to proceed with the assessment and set the level of assessment at Public Environmental Review Strategic Proposal (PERSP). This document and its supporting studies form that PERSP document.

1.2 BHP Billiton Iron Ore's Approach to Strategic Environmental Assessment

In seeking approval for this long-term development program, BHP Billiton Iron Ore needs to provide the Western Australian Minister for Environment and Heritage with confidence that, at the time of assessment, implementation of BHP Billiton Iron Ore's Strategic Proposal will not have unacceptable environmental impacts and that the processes agreed to as part of the Strategic Proposal will ensure impacts remain acceptable over the life of the approval.

To provide this confidence to the Minister, regulators and all stakeholders, BHP Billiton Iron Ore has undertaken a thorough and robust assessment of the Strategic Proposal using the best available information. The PERSP provides a regional-scale assessment of potential impacts associated with the Strategic Proposal and establishes the management frameworks and processes within which future developments will operate.

Given that the PERSP is considering developments over a long time frame, the management framework presented herein is sufficiently flexible to address foreseeable change. As part of the PERSP, BHP Billiton Iron Ore has developed an approach to monitoring, auditing, evaluation, adaptive management and reporting to assist in addressing potential uncertainties. Uncertainties may include advancements in scientific knowledge of environmental systems and processes over time and changes to policy, leading practice management and state or Commonwealth legislation.

The key elements of any environmental impact assessment are evaluating the existing environment, detailing the nature of the proposal, evaluating the environmental impacts, outlining management responses and quantifying the residual impact. While an assessment of a strategic proposal follows a similar process, it is fundamentally different from typical individual project environmental impact assessments in that it has a broader, regional focus and considers regional management approaches rather than site-specific mitigation measures. Individual future proposals (Derived Proposals) that are part of the overall strategic proposal will provide a greater level of project-specific information and will verify and validate predicted impacts and management approaches at a local scale.

Figure 1 outlines the key steps in delivering an environmental impact assessment of a strategic proposal. These steps are discussed in more detail below.

1.2.1 UNDERSTAND THE AREA IN WHICH WE OPERATE

The PERSP seeks to present the best available information on the biophysical environment within the areas of BHP Billiton Iron Ore's future operations and the areas potentially influenced by those operations. A Project Definition Boundary has been developed for this purpose and is used as a default boundary for the environmental impact assessment, except where boundaries were varied for environmental factors as described below. It is a nominal boundary based on a 50-km buffer around current BHP Billiton Iron Ore mining tenure.

Each of the EPA's environmental factors has been considered individually, and the scale of the areas considered varies with each factor. For example, flora and fauna are considered at a bioregional scale (Pilbara), hydrology is considered at a catchment scale, and dust is considered at an airshed scale.

Data informing the assessment has been consolidated at the relevant scale for each environmental factor. Regional sources include vegetation mapping, species records, species richness modelling, and regional habitat preference modelling for targeted species. BHP Billiton Iron Ore is also able to bring together nearly 25 years of flora and fauna surveys across its tenure and combine this with regional publicly available data. This assessment has also been informed by recent publications by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and by workshops with species experts looking at the key threats to rare and threatened species.

Figure 1: Overview of the PERSP Approach

Conceptual models have been used to demonstrate an understanding of systems and processes, particularly in explaining surface and groundwater systems and key hydrological features, such as springs and waterways. Conceptual models have also been used to illustrate descriptions of the types of activities that occur in typical iron ore mining operations and orebodies common to BHP Billiton Iron Ore operations in the Pilbara. These models have been developed based on extensive hydrological knowledge and operational experience gained in the region over nearly 50 years.

In its entirety, this information has provided BHP Billiton Iron Ore with a strong basis for undertaking a regional assessment. Key aspects of this work have been peer reviewed by subject matter experts.

1.2.2 IDENTIFY SIGNIFICANT FEATURES

In considering regional information, it is evident that there are aspects that need to be examined more closely as part of the environmental impact assessment. For example, some environmental features (assets) within the Project Definition Boundary, such as springs, wetlands and gorges, are recognised as threatened and priority ecological communities. Similarly, there are key listed flora and fauna species that are considered to be conservation-significant, and there are areas that have important landscape or recreational values.

Based on consultation, including with the Department of Parks and Wildlife and Rangelands Natural Resource Management, and previous studies, BHP Billiton Iron Ore has recognised these significant environmental features (assets) and species and has tailored a regional management approach to focus on the most important environmental values.

1.2.3 WHAT ARE THE CURRENT AND FUTURE THREATS TO THE ENVIRONMENT?

The PERSP has brought together contemporary information to identify the key threatening processes from both mining and non-mining activities on the biophysical environment within and surrounding the Project Definition Boundary. This task has been informed by a number of recent publications and workshops, as well as by technical peer reviewers. Key threats include climate change; altered fire regimes; invasive species; land clearing; increased grazing pressure from pastoral activities; and mining impacts, such as groundwater drawdown.

Crucial to the assessment is an understanding of both current and future mining activities. While the specifics of all future operations are not available at this time, BHP Billiton Iron Ore has prepared conceptual development scenarios (Section 7.4) to enable an assessment of the significance of impacts and to identify the focus for future management. Similarly, all reasonably foreseeable mining operations (those that are operational, approved or in the approvals process) from other companies have also been documented. Details on impacts from these operations have been taken from publicly available information.

1.2.4 A REGIONAL MANAGEMENT APPROACH

Given the regional focus of the assessment, BHP Billiton Iron Ore has developed a regional management approach (RMA) that links regional objectives and outcomes (for key assets and species) to consistent and coordinated regional management. The approach has been structured to align with the EPA's factor objectives and to provide a framework that cascades these regional objectives to specific management outcomes that can be addressed for each Derived Proposal assessed as part of the Strategic Proposal. Key elements of the approach include:

- developing regional management objectives that align with EPA's objectives;
- identifying relevant mitigation options;
- embedding an adaptive management approach; and

- providing a framework for the development of measureable biophysical management outcomes and performance criteria (e.g. targets, triggers or thresholds) for key assets and species at the Derived Proposal stage.

1.2.5 CUMULATIVE IMPACT ASSESSMENT

Having consolidated information on the existing environment, identified key environmental features (assets) and species, and defined the Strategic Proposal and other threatening processes, BHP Billiton Iron Ore has undertaken a number of factor-based regional cumulative impact assessments (CIAs). Using a spatial geographic information system (GIS) analysis, relevant direct and indirect impacts have been considered where sufficient knowledge was available to support a quantitative assessment. The assessments covered:

- biodiversity;
- water (surface and groundwater);
- air quality;
- noise; and
- landscape and visual amenity.

The purposes of the cumulative impact assessments were to understand potential impacts on key environmental factors arising from the Strategic Proposal and to quantify the significance of the impact where possible. The cumulative impact assessments has identified areas in which an increased BHP Billiton Iron Ore management focus is required to ensure that potential impacts can be mitigated to an acceptable level.

For further details on the impact assessment approach, refer to Chapter 7.

1.2.6 ASSURANCE FRAMEWORK

While it is the intent of the PERSP to provide confidence that BHP Billiton Iron Ore's operations can be undertaken to meet the EPA's objectives, the Company recognises that, given the potential time span of the Strategic Proposal, changes to the environment, regulation and guidance will inevitably occur and that stakeholders will require assurance that BHP Billiton Iron Ore will continue to implement best environmental practice. In addition, stakeholders want confidence that the Company will deliver on the commitments made in the PERSP and that the appropriate checks and balances will be in place and will be transparent over the life of the Strategic Proposal.

To this end, BHP Billiton Iron Ore has committed to an assurance framework for each Derived Proposal referred under the Strategic Proposal. The assurance framework will deliver the following:

- a proposed verification and validation process to meet EPA's requirements to declare a Derived Proposal;
- consultation with decision-making authorities on the development of regional management plans. Any plans will need to be approved by the chief executive officer (CEO) of the Office of the EPA;
- inclusion in these plans of measurable management outcomes and performance criteria (e.g. targets, indicators or thresholds), which will be publicly reported; and
- early and ongoing stakeholder engagement.

The assurance framework is described in further detail in provided in Chapter 10.

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2 SCOPE OF THE STRATEGIC PROPOSAL

2.1 Activities within the Scope of the Strategic Proposal

BHP Billiton Iron Ore's Strategic Proposal includes proposed mining and associated infrastructure development activities within the Pilbara. Subject to express exclusions, the Strategic Proposal includes all new mine developments involving resources in which BHP Billiton Iron Ore currently has or may acquire an interest and developments of existing assets, all within the Project Definition Boundary (defined in Section 2.2).

The Strategic Proposal groups these proposed future developments around a series of nominal mining operations to facilitate the efficient processing and transportation of ore, although the location of mining operations may change in the future (for example, in response to newly identified resources, as a result of technology advances or to avoid environmental impacts).

Based on current knowledge, the Strategic Proposal includes the following key components:

- new mining operations at:
  - Caramulla;
  - Coondiner;
  - Gurinbiddy;
  - Jinidi;
  - Marillana;
  - Mindy;
  - Ministers North;
  - Mudlark;
  - Munjina/Upper Marillana;
  - Ophthalmia/Prairie Down;
  - Rocklea;
  - Roy Hill; and
  - Tandanya
- future expansions to existing mining operations at:
  - Jimblebar;
  - Mining Area C;
  - Newman; and
  - Yandi.
- associated infrastructure, including, but not limited to, power lines, pipelines, accommodation camps, access roads, conveyors and airports;
- rail spurs (connecting the new mining operations to existing rail infrastructure);
- rail loops (within each mining operation to enable ore loading); and
- potential expanded rail capacity of the Newman to Port Hedland rail line.

The PERSP considers the direct, indirect and cumulative impacts to environmental factors as a result of the above activities.

The Strategic Proposal does not include:

- developments within any existing national park, including Karijini National Park;
- activities at Port Hedland or north of rail-chainage 26 km;
- development of the proposed South Flank mine;

- developments within the scope of existing approved BHP Billiton Iron Ore operations and infrastructure; or
- future developments within BHP Billiton Iron Ore's existing operations along the Goldsworthy rail line from Goldsworthy to and including Yarrie.

Since referral of the PERSP, BHP Billiton Iron Ore has sought to amend the scope of the PERSP to include Jinidi mine and exclude South Flank mine. These amendments were approved by the Chairman of the EPA under s43A of the *Environmental Protection Act 1986* (EP Act). These areas have however been included in the cumulative impact assessment for completeness.

2.2 Strategic Proposal Project Definition Boundary

BHP Billiton Iron Ore is actively exploring for iron ore, completing detailed technical studies and engaging with stakeholders with respect to current and planned activities, including the Strategic Proposal. Until such programs are finalised, a degree of flexibility in the location and design of key components of new mines is necessary.

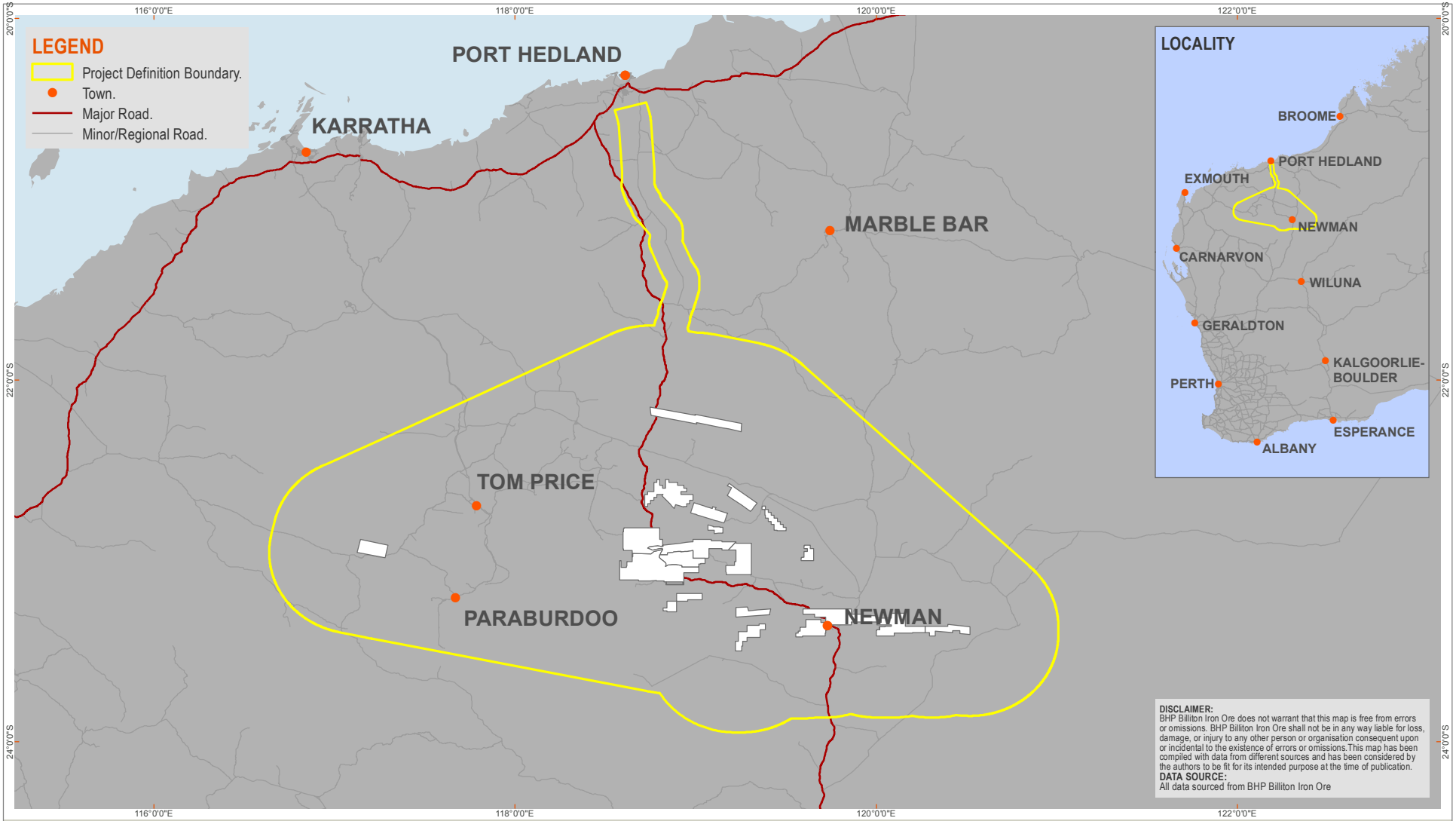
To accommodate this need, BHP Billiton Iron Ore has defined a Project Definition Boundary for the Strategic Proposal (Figure 2) that identifies the area within which activities covered by the scope of the Strategic Proposal will be undertaken. The total area of the Project Definition Boundary is 7,650,074 ha. Based on the Full Conceptual Development Scenario (see Section 7.4.3) the implementation of the Strategic Proposal could result in a total disturbance area of up to 98,500ha[1]. The actual disturbance footprint will be defined during the derived proposal phase for each future proposal, where key characteristics will be specified.

Sources of current knowledge of the area within the Project Definition Boundary and data relevant to the Strategic Proposal include BHP Billiton Iron Ore's data; other Pilbara proponents' publicly available survey data; and data generated by scientists, researchers and regulators within the region. Over the last decade, BHP Billiton Iron Ore has completed over 350 individually commissioned biological studies within the Project Definition Boundary. Knowledge and data will continue to be accumulated in the future and used to inform adaptive management for future operations so that improvements can be made and changing environmental conditions can be considered and accounted for.

All of the future operations contained within the Strategic Proposal in the Project Definition Boundary will be located on tenure for which BHP Billiton Iron Ore will have lawful access (e.g. under the *Mining Act 1978* or future equivalent). Some of these proposed future operations occur partly within the BHP Billiton Iron Ore–managed Marillana, Sylvania and Ethel Gorge pastoral leases. Land surrounding the proposed mines and associated infrastructure is predominantly used for mineral exploration, iron ore mining and dry land agriculture, specifically pastoralism, cattle grazing and rangelands.

Mining activities do not generally utilise all land on the lease for mining activities; thus, land officially under mining tenement far exceeds the portion of land subject to mining and exploration activities (Department of Planning 2009). Mining tenement data for the Project Definition Boundary includes both live and pending tenements, so the amount of land actually used for BHP Billiton Iron Ore mining activities will be considerably less than that encompassed within the Project Definition Boundary.

[1] This area is based on Table 8 but excludes South Flank which will be referred separately. The assessment of cumulative impacts has included assessment of the Full Conceptual Development Scenario (including South Flank).



Public Environmental Review
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Environmental Approvals

Figure 2 Project Definition Boundary and BHP Billiton Iron Ore Strategic Proposal Tenure

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3 BHP BILLITON IRON ORE

3.1 Proponent Details

The proponent for the Strategic Proposal is BHP Billiton Iron Ore (also referred to as the Company). The key proponent contact details for the proposal are as follows:

Project Manager – Strategic Proposal
BHP Billiton Iron Ore
125 St Georges Terrace
Perth, Western Australia 6000
Telephone: 08 6224 4444
Email: pilbarastrategicassessment@bhpbilliton.com

3.2 Company Background and Project Rationale

BHP Billiton is among the world's largest producers of major commodities, including coal, copper, iron ore, nickel and uranium, and has substantial interests in oil and gas. BHP Billiton Iron Ore, one of BHP Billiton's businesses, has been developing mines and infrastructure in the Pilbara region since the 1960s (Box 1) and to replace and sustain its existing mines, the Company proposes to continue to do so over the long term. BHP Billiton Iron Ore is committed to working with its local communities to support sustainable development in the Pilbara region.

In alignment with the EPA, BHP Billiton Iron Ore considers that its decision to pursue the Strategic Proposal has the following benefits:

- the early consideration of environmental issues, including relevant environmental factors, providing the ability to influence design of future project development;
- the ability to consider cumulative impacts to environmental factors;
- greater certainty for local communities regarding the maximum extent of impacts and greater confidence in future development;
- an increased surety for BHP Billiton Iron Ore that its proposed environmental management approaches will result in appropriate management of impacts;
- a standardised and consistent environmental management approach across operations with environmental and economic benefits;
- a long-term approach to environmental management, focusing on environmental outcomes and allowing adaptive management; and
- greater efficiencies in the environmental approvals process for the community, government and BHP Billiton Iron Ore.

Box 1: BHP Billiton Iron Ore's History in the Pilbara

The company that we now know as 'BHP Billiton' started life as the Broken Hill Proprietary Company, against the backdrop of an iron ore export embargo that lasted from 1938 to 1960, when it was colloquially known as 'Australia's steelmaker'. BHP was one of the pioneers of the Western Australian iron ore industry. As well as the more well-known deposits of which it is the sole operator, BHP has been involved in numerous joint ventures with other smaller or foreign operators. The railway infrastructure established during the 1960s and 1970s by BHP and other Pilbara iron ore mining majors now forms some of the biggest privately owned rail networks in the world (Lee 2015). BHP merged with Billiton in 2001 to create the largest mining company in the world, BHP Billiton, and to consolidate its position as one of the major operators within the Pilbara. BHP Billiton Iron Ore currently has mining operations in four main locations in the Pilbara at Yandi, Mining Area C, Newman and Jimblebar.

Source: BHP Billiton Iron Ore.
Plate: Mt Whaleback operations 1968

Source: BHP Billiton Iron Ore.
Plate: Yandi operations 2015

BHP Billiton Iron Ore's commitment to sustainable development has evolved over the Company's long history of operational experience, and the Company now recognises the benefits of balancing successful management of environmental and social performance with economic benefits. For example, since 2001, BHP Billiton Iron Ore has invested in improving student school retention and completion in the 'host' communities in Port Hedland and Newman (Lee 2015).

The Company has accumulated a wealth of environmental data and knowledge of the potential environmental impacts of mining and the management measures that can be applied. BHP Billiton Iron Ore is well placed to consider opportunities for environmental management of proposed operations at a regional scale.

BHP Billiton Iron Ore is an industry leader in providing research advancements in the knowledge of Pilbara species distribution and attributes. BHP Billiton Iron Ore further contributes to the scientific community and the Pilbara environment through support and funding of research projects and other environmental initiatives. Some of the recent projects are listed in Table 1.

Table 1: BHP Billiton Iron Ore environmental initiatives

ENVIRONMENTAL INITIATIVE	OUTCOME
Pilbara Seed Atlas	Climate controlled seed store on site.
Restoration Seed Bank	Significant improvement to seed management practices, resulting in a step change in revegetation of rehabilitated areas.
Pilbara Restoration Initiative	
Pilbara Rehabilitation Group	Facilitated Pilbara Industry engagement in rehabilitation issues and research.
Coondewanna Flats ecohydrology study	Determination of groundwater-dependent ecosystem requirements.
Wetland values of eastern Pilbara	Identification and evaluation of ecohydrological assets and their ecological linkages.
Window into the Underworld	Improved understanding of subterranean fauna populations of the Pilbara.
Regional vegetation and habitat mapping	Standardisation of environmental studies approach.
Ecological community-level modelling	Production of a consolidated vegetation and habitat map for all BHP Billiton Iron Ore tenements.
Rapid biodiversity assessment	Modelled approach to identifying biodiversity values of the Pilbara.
Pilbara leaf-nosed bat genetic research	Genetic mapping of threatened species for population linkages.
Dynamics of woody vegetation and water in the central Pilbara	Improved understanding of biogeochemistry of floodplain and riparian landscapes, dynamics of water and tree populations in riparian woodlands, encroachment by woody scrub, and effects of fire and climate.
Ecological responses of native fish to extreme flow variability in arid Australia	Understanding of the impact of altered water flows in arid Australia on native fish.
WAMinals	Making invertebrate taxonomic information more robust and available to the public through the Western Australian Museum.
Western Australian Herbarium	Improved taxonomic key for flora of the Pilbara, including increased collection of voucher specimens.

3.2.1 BHP BILLITON'S APPROACH TO ENVIRONMENTAL MANAGEMENT

Sustainable development is core to BHP Billiton's business strategy, and its approach to sustainability is about ensuring the Company contributes lasting benefits through the consideration of social, ethical and environmental aspects in all that it does.

The effective identification, assessment and management of risk form the basis of BHP Billiton's practical approach to sustainable development. The underlying ethos is that, by understanding and managing its risks, BHP Billiton can provide greater protection to its employees, communities and operations and increased certainty and confidence for its shareholders, customers and suppliers and the communities in which it operates. To effectively mitigate such risks, BHP Billiton has adopted a top-down, fully integrated approach whereby sustainability is directed and embedded within the core business strategy at the corporate level – through the Company Charter and Group Level Documents (GLDs) – and at the Business Unit level for BHP Billiton Iron Ore, assimilated into day-to-day operations through BHP Billiton Iron Ore's regional approach to environmental management (Chapter 6).

3.2.1.1 CORPORATE VALUES AND STANDARDS

All BHP Billiton activities, including BHP Billiton Iron Ore activities in Western Australia, operate under the Company Charter (Box 2), which outlines the Company's strategy, values and success criteria. Central to BHP Billiton Iron Ore's environmental management approach are the minimum mandatory requirements contained within the BHP Billiton Environment GLD. These requirements align with BHP Billiton's management of risk and enhance the emphasis on the hierarchy of controls to avoid, minimise and offset direct, indirect and cumulative impacts within the Company's area of influence. The Environment GLD requires BHP Billiton Iron Ore to set target environmental outcomes for land, biodiversity, water resources and air and to prevent or minimise greenhouse gas emissions, including during project design. Where unacceptable impacts to important biodiversity and ecosystems remain, the Company is required to consider compensatory actions to address significant residual impacts. The Company also pursues national and international conservation opportunities that will deliver long-term environmental benefits.

3.2.1.2 PUBLIC REPORTING AND INDEPENDENT ASSURANCE

BHP Billiton is committed to engaging with its stakeholders and transparently reporting on its sustainability performance. The Company publicly reports its performance on sustainability each year in the BHP Billiton Annual Sustainability Report. The report serves as a public reference, providing a collation of performance data and statements of key issues and related management approaches. The report also describes how sustainability issues are prioritised and what the management approach is to such issues.

In addition, this PERSP is subject to stakeholder and peer review, as described in Chapter 12 and Section 7.8 respectively.

Box 2: BHP Billiton Iron Ore Charter

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Our Charter

We are BHP Billiton, a leading global resources company.

Our purpose is to create long-term shareholder value through the discovery, acquisition, development and marketing of natural resources.

Our strategy is to own and operate large, long-life, low-cost, expandable, upstream assets diversified by commodity, geography and market.

Our Values

Sustainability
Putting health and safety first, being environmentally responsible and supporting our communities.

Integrity
Doing what is right and doing what we say we will do.

Respect
Embracing openness, trust, teamwork, diversity and relationships that are mutually beneficial.

Performance
Achieving superior business results by stretching our capabilities.

Simplicity
Focusing our efforts on the things that matter most.

Accountability
Defining and accepting responsibility and delivering on our commitments.

We are successful when:

Our people start each day with a sense of purpose and end the day with a sense of accomplishment.
Our communities, customers and suppliers value their relationships with us.
Our asset portfolio is world-class and sustainably developed.
Our operational discipline and financial strength enables our future growth.
Our shareholders receive a superior return on their investment.

Andrew Mackenzie
Chief Executive Officer

May 2013

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4 LEGISLATIVE CONTEXT

4.1 Overview

The EPA (2012b) defines a strategic proposal as:

> a proposal which identifies one or more future proposals that may, individually or in combination, have a significant effect on the environment. Generally, a strategic proposal does not, of itself, have a direct impact on the environment. Instead, strategic proposals anticipate that there will be one or more future proposals that may have a significant environmental impact if implemented singly or in combination and which might normally be assessed on a case-by-case basis.

A Derived Proposal is (EPA 2012b):

> a future proposal which was identified in the strategic proposal, which has been referred to and considered by the EPA, and which is then declared to be a Derived Proposal.

Figure 3 provides an overview of the level of assessment and information provided at the Scoping, Strategic Proposal and Derived Proposal stages. The process reflects the strategic nature and high level of assessment expected in a Strategic Proposal, while the Derived Proposal provides the project-specific data and validation that a specific development was adequately assessed under the Strategic Proposal. For further information on the legislative considerations for the Strategic Proposal, refer to Appendix 1.

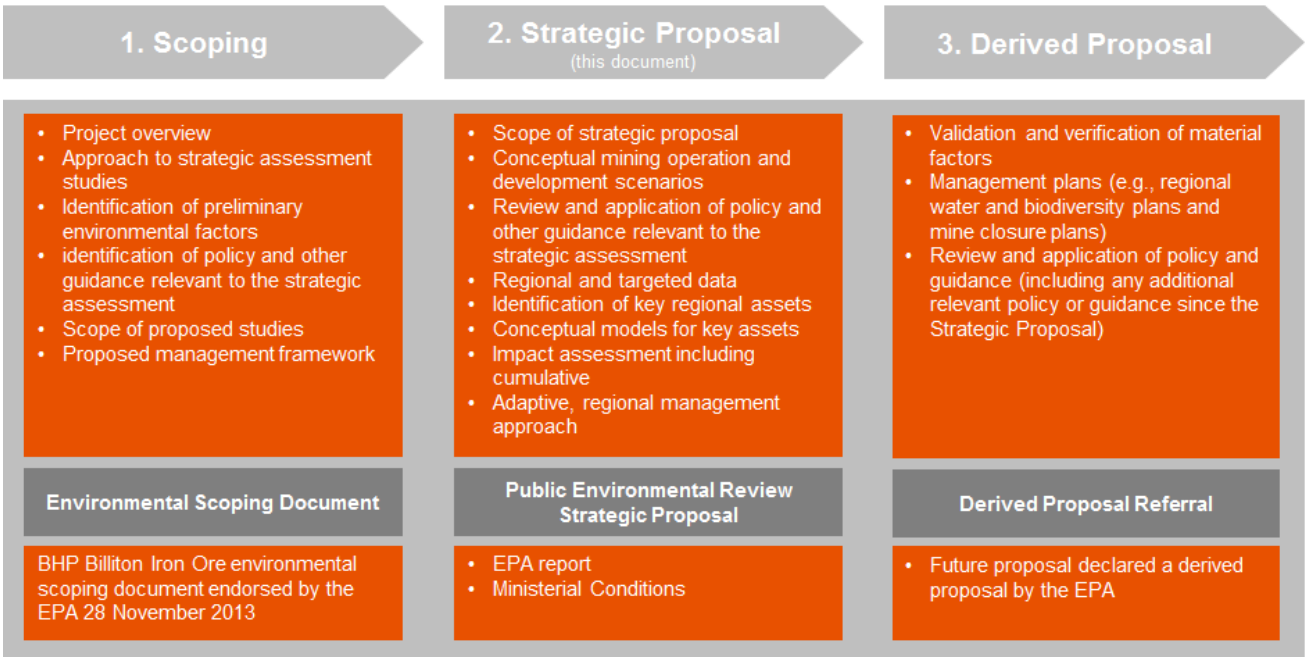

Figure 3: Overview of the strategic proposal environmental assessment process

4.2 State Process

This PERSP has been prepared in accordance with the ESD (BHP Billiton Iron Ore 2013). All studies identified in the ESD have been completed (refer to Chapter 14).

4.2.1 EPA ENVIRONMENTAL FACTORS, OBJECTIVES AND PRINCIPLES

'*An environmental factor is a part of the environment that may be impacted by an aspect of the proposal…. The related environmental objective for each factor is the desired goal that, if met, will indicate that the proposal is not expected to have a significant impact on that part (factor) of the environment.*' (EPA 2015a).

The EPA's determination on the Strategic Proposal referral (and the ESD) was that the preliminary environmental factors were water (surface and groundwater), flora and vegetation, fauna and habitat, rehabilitation and closure, and air quality, including greenhouse gas (GHG) emissions. The EPA identified cumulative and regional-scale impacts to water resources, air quality and biodiversity values as the potential significant impacts associated with the Strategic Proposal if not assessed and managed appropriately.

The EPA factors that pertain to social impacts include Human Health, Amenity, and Heritage; and these have been assessed within the PERSP. Human health, at the strategic level, is addressed through the air quality, amenity and terrestrial environmental quality factors.

BHP Billiton Iron Ore manages and protects Aboriginal heritage in accordance with the WA *Aboriginal Heritage Act 1972*. Potential impacts to heritage sites associated with the Strategic Proposal will continue to be managed through BHP Billiton Iron Ore's internal heritage management processes. The engagement of Native Title groups is guided by Heritage Protocols between the groups and BHP Billiton Iron Ore.

BHP Billiton has published a corporate Climate Change Position that includes a commitment to build the resilience of operations, investments, communities and ecosystems to the impacts of climate change. This policy is a multifaceted approach that also addresses emission across its business and aims to:

- understand emissions from the full life cycle of the products that BHP Billiton produces;
- improve the management of energy and GHG emissions across the business;
- support the development of low emissions technology and encourage emissions abatement by employees and local communities; and
- use technical capacity and experience to assist government and other stakeholders to design effective and equitable climate change policies, such as emissions trading.

4.2.1.1 EPA ENVIRONMENTAL FACTORS

This PERSP addresses the following EPA environmental factors for the relevant EPA themes, in accordance with the ESD and Environmental Assessment Guideline 8 (EPA 2015a):

- **Land** – Flora and Vegetation, Landforms, Subterranean Fauna, Terrestrial Environmental Quality and Terrestrial Fauna;
- **Water** – Hydrological Processes and Inland Waters Environmental Quality;
- **Air** – Air Quality and Atmospheric Gases;
- **People** – Amenity, Heritage and Human Health; and
- **Integrating Factors** – Rehabilitation and Decommissioning and Offsets.

The impact assessment contained within this PERSP (Chapter 8) examines these environmental factors and their likely significance of impact to the environment once mitigation measures have been applied.

4.2.1.2 EPA ENVIRONMENTAL FACTOR OBJECTIVES

The EPA has defined management objectives for each environmental factor. At a regional scale, all driving and threatening processes relating to key species, environmental assets and other biophysical elements will not typically be controlled by BHP Billiton Iron Ore. As a result, BHP Billiton Iron Ore has set regional objectives for each factor in the regional management approach that reflect those aspects within its ability to influence, namely minimising impacts from its operations.

BHP Billiton Iron Ore's outcome-based objectives for environmental factors are aligned with the EPA's objectives, as per Environmental Assessment Guideline for Environmental Principles, Factors and Objectives No. 8 (EPA 2015a). The process used to demonstrate that environmental objectives will be met is aligned with the EPA's Environmental Assessment Guideline for Application of a Significance Framework in the Environmental Impact Assessment Process (EPA 2015b). A summary of the EPA's objectives and their alignment with BHP Billiton Iron Ore objectives for each environmental factor is show in Table 2. BHP Billiton Iron Ore's management approach, including how the Company will meet the EPA's environmental factor objectives, is detailed in Chapter 6.

Table 2: Environmental management objectives

THEME	ENVIRONMENTAL FACTOR	EPA OBJECTIVE	BHP BILLITON IRON ORE OBJECTIVE
Land	Flora and Vegetation	To maintain representation, diversity, viability and ecological function at the species, population and community level.	BHP Billiton Iron Ore shall mitigate risks, in accordance with the mitigation hierarchy (i.e. avoid, minimise, rehabilitate and, where appropriate, offset) to flora and vegetation from its activities to an acceptable level.
	Landforms	To maintain the variety, integrity, ecological functions and environmental values of landforms and soils.	BHP Billiton Iron Ore shall mitigate risks to landforms from its activities to an acceptable level.
	Subterranean Fauna	To maintain representation, diversity, viability and ecological function at the species, population and assemblage level.	BHP Billiton Iron Ore shall mitigate risks to subterranean fauna from its activities to an acceptable level.
	Terrestrial Environmental Quality	To maintain the quality of land and soils so that the environment values, both ecological and social, are protected.	BHP Billiton Iron Ore shall mitigate risks to terrestrial environmental quality from its activities to an acceptable level.
	Terrestrial Fauna	To maintain representation, diversity, viability and ecological function at the species, population and assemblage level.	BHP Billiton Iron Ore shall mitigate risks to terrestrial fauna from its activities to an acceptable level.
Water	Hydrological Processes	To maintain the hydrological regimes of groundwater and surface water so that existing and potential uses, including ecosystem maintenance are protected.	BHP Billiton Iron Ore shall mitigate risks to hydrological processes from its activities to an acceptable level.
	Inland Waters Environmental Quality	To maintain the quality of groundwater and surface water, sediment and biota so that the environmental values, both ecological and social, are protected.	BHP Billiton Iron Ore shall mitigate risks to inland waters environmental quality from its activities to an acceptable level.

THEME	ENVIRONMENTAL FACTOR	EPA OBJECTIVE	BHP BILLITON IRON ORE OBJECTIVE
People	Heritage	To ensure that historical and cultural associations, and natural heritage, are not adversely affected.	BHP Billiton Iron Ore shall mitigate risks to heritage from its activities to an acceptable level.
	Amenity	To ensure that impacts to amenity are reduced as low as reasonably practicable.	BHP Billiton Iron Ore shall mitigate risks to amenity from its activities to an acceptable level.
	Human Health	To ensure human health is not adversely affected.	BHP Billiton Iron Ore shall mitigate risks to human health from its activities to an acceptable level.
Air Quality	Air Quality and Atmospheric Gases	To maintain air quality for the protection of the environment and human health and amenity, and to minimise the emission of greenhouse and other atmospheric gases through the application of best practice.	BHP Billiton Iron Ore shall mitigate risks to air quality and from atmospheric gases from its activities to an acceptable level.
Integrating Factors	Rehabilitation and Decommissioning	To ensure that premises are decommissioned and rehabilitated in an ecologically sustainable manner.	BHP Billiton Iron Ore shall manage its activities for the creation of safe, stable, non-polluting and sustainable landscapes so as to reduce risks to an acceptable level.
	Offsets	To counterbalance any significant residual environmental impacts or uncertainty through the application of offsets.	BHP Billiton Iron Ore shall counterbalance any significant residual environmental impacts or uncertainty through the application of appropriate, effective and enduring offsets.

4.2.1.3 EPA ENVIRONMENTAL PRINCIPLES

The EPA in its assessment of the Strategic Proposal is required to have regard for the environmental principles set out in section 4A of the EP Act and outlined in the EPA's Environmental Assessment Guideline 8 (EPA 2015a):

- The precautionary principle: where there are threats of serious or irreversible damage, lack of scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation;
- Intergenerational equity: the present generation should ensure that the health, diversity, and productivity of the environment is maintained or enhanced for the benefit of future generations;
- Conservation of biological diversity and ecological integrity: conservation of biological diversity and ecological integrity should be a fundamental consideration;
- Improved valuation, pricing and incentive mechanisms: improved valuation, pricing and incentive mechanisms should be promoted; and
- Waste minimisation: all reasonable and practicable measures should be taken to minimise the generation of waste and its discharge to the environment.

The Strategic Proposal will meet these principles through the management framework outlined in this PERSP and BHP Billiton Iron Ore's vision for environmental management (BHP Billiton 2014):

> we demonstrate environmental responsibility by minimising environmental impacts and contributing to enduring benefits to biodiversity, ecosystems and other environmental resources.

BHP Billiton Iron Ore has been operating in the Pilbara for over 50 years and, in this time, has developed a large database of environmental information about its tenure that has informed the environmental management approach embedded within BHP Billiton's internal GLDs. BHP Billiton's corporate documentation requires that biodiversity within BHP Billiton's area of influence is managed to minimise impacts to the environment and, where required, that potential biodiversity risks (particularly those relating to closure and rehabilitation) are appropriately incorporated into internal planning and decision-making processes. These corporate documents further specify the minimum requirements with regards to the assessment of biodiversity baseline conditions, potential impacts, risks of impacts and the development and implementation of appropriate mitigation controls.

The internal process allows business planning and decision-making to be robust and well informed about the potential risks, so the risks can be suitably avoided, controlled or managed. The Strategic Proposal strengthens this approach by providing a broader context for the identification, assessment and management of risks to the environment posed by BHP Billiton Iron Ore's long-term development activities in the Pilbara. This includes implementation of the regional management approach, which incorporates adaptive management; implementation of the internal assurance process; and application of the mitigation hierarchy (all discussed in Chapter 12).

4.2.2 PERSP ASSESSMENT PROCESS

The assessment of strategic proposals aims to establish acceptable environmental parameters within which Derived Proposals, individually and in combination, are expected to operate (EPA 2012b). A strategic proposal assessment is different from a typical assessment process because it occurs in two phases (Figure 4).

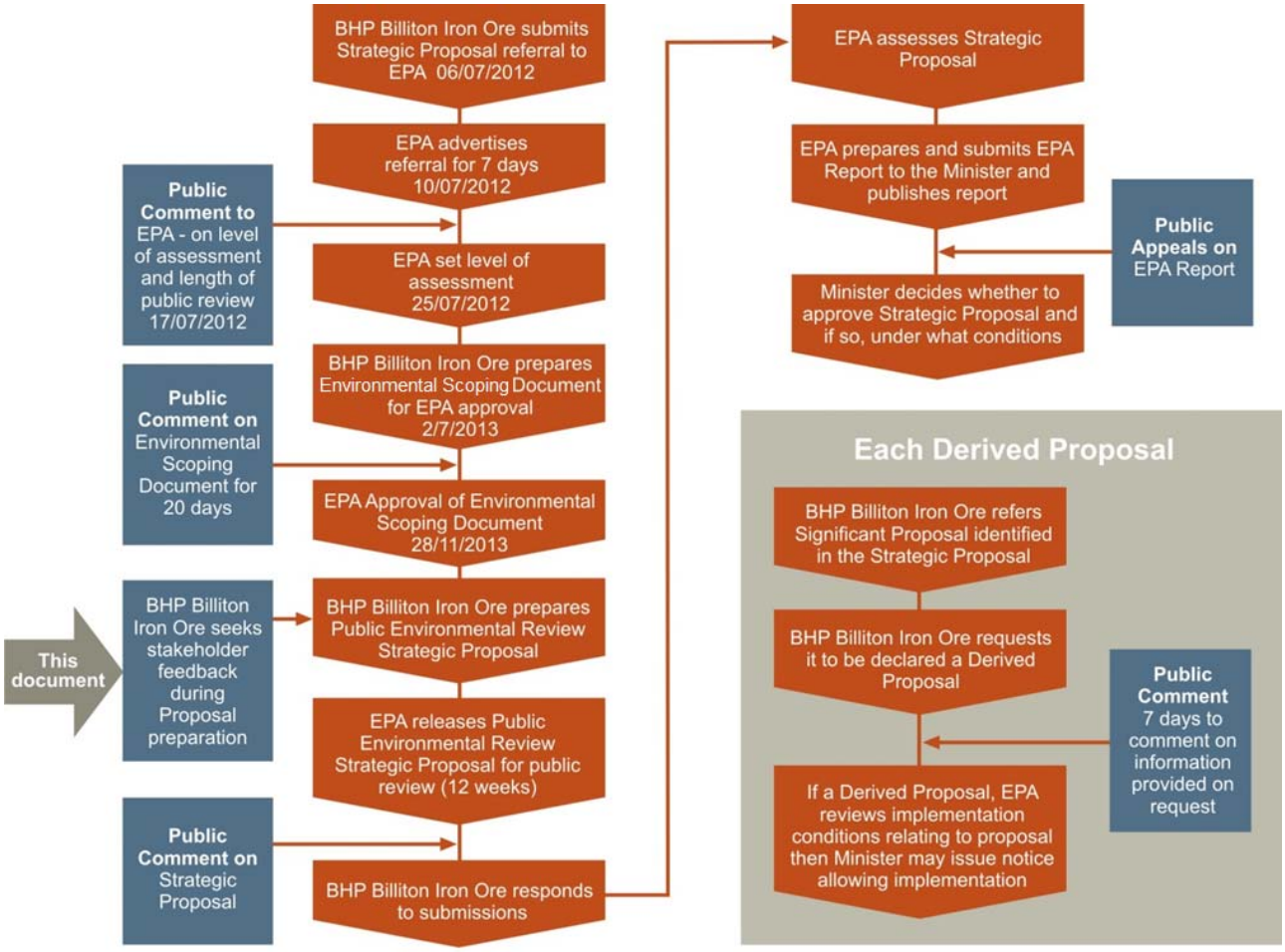

Figure 4: EPA flowchart for the Strategic Proposal assessment process

These phases are:

- **Phase one** is the assessment of a strategic proposal, which has a regional focus and consists of several separate proposals that individually or in combination may have environmental impacts; and
- **Phase two** involves consideration of an individual future proposal (a Derived Proposal). The future proposal must have been considered in the strategic proposal and its environmental impacts adequately assessed when the strategic proposal was assessed to be able to be declared a Derived Proposal by the EPABHP Billiton Iron Ore lodged a Strategic Proposal referral with the EPA on 6 July 2012 (BHP Billiton Iron Ore 2012). Following the public comment period, the EPA announced on 25 July 2012 the decision to proceed with the assessment and set the level of assessment at PERSP.

BHP Billiton Iron Ore prepared an ESD (BHP Billiton Iron Ore 2013), which was submitted to and then approved by the EPA on 28 November 2013. The ESD provided the scope of the PERSP, including the proposed studies to support the overall assessment process.

This PERSP is subject to a public review period. BHP Billiton Iron Ore will then respond to issues raised, following which the EPA will submit its assessment report to the Minister. In the assessment report, the EPA will set out the key environmental factors identified during the assessment and recommend whether or not the future proposals identified in the Strategic Proposal may be implemented. If the EPA recommends that the future proposals identified in the Strategic Proposal may be implemented, it also recommends any conditions that should apply to those future proposals.

4.2.3 DERIVED PROPOSAL PROCESS

It is expected that BHP Billiton Iron Ore will, over a period of time, refer future proposals for activities within the scope of the Strategic Proposal (Section 2.1) and which are contained within the Strategic Proposal Project Definition Boundary (Section 2.2) to the EPA and request that the EPA declare each to be a Derived Proposal.

For the EPA to be able to determine that a future proposal is a Derived Proposal, the EPA must be satisfied that the future proposal was identified in the strategic proposal and that the Strategic Proposal Ministerial Statement provides that the future proposal may be implemented.

Information provided to the EPA to support a Derived Proposal application under this Strategic Proposal would include:

- validation and verification of predicted impacts assessed for the Strategic Proposal;
- establishment of management requirements to be implemented to meet environmental outcomes established in this PERSP and Ministerial conditions; and
- establishment of monitoring and compliance reporting protocols.

If the Minister for Environment finds that a strategic proposal may be implemented, a Ministerial Statement for the strategic proposal is published. Then, in the future, when a proposed development that has been identified in the strategic proposal is referred to the EPA under s. 38 of the EP Act, the proponent may request that the EPA declare the proposal to be a Derived Proposal (i.e. derived from a strategic proposal) under s. 39B of the EP Act. The EPA publishes any such request on the EPA website.

The EPA requires proponents to consult with the community and relevant decision-making authorities on the proposal and any subsequent plans required by conditions, before referral to the EPA (EPA 2012b). The information submitted to the EPA by the proponent must demonstrate how the community and decision-making authority concerns are dealt with in the referral document.

The EPA provides a seven-day public comment period on the information submitted by the proponent with its request that the proposal be declared a Derived Proposal. The public comments should be made in relation to whether or not the proposal is to be declared a Derived Proposal.

When a future proposal is referred, the EPA considers it to be a Derived Proposal if:

- The proposal was identified in the strategic proposal that has been assessed by the EPA; and
- The Ministerial Statement for the strategic proposal allows the proposal to be implemented, subject to any conditions.

The EPA may refuse to declare the referred proposal a Derived Proposal if it considers that:

- The environmental issues raised by the referred proposal were not adequately assessed in the strategic proposal;
- There is significant new or additional information that justifies the reassessment of the issues raised by the referred proposal; or
- There has been a significant change in the relevant environmental factors since the strategic proposal was assessed.

The EPA will assess whether or not the implementation conditions relating to the Strategic Proposal apply to the Derived Proposal. Where the EPA decides to declare a referred proposal to be a Derived Proposal, it publishes the reasons for the declaration on the EPA website. A notice is issued to the proponent of the Derived Proposal allowing implementation of the proposal, and the notice will specify which conditions would apply.

If the EPA declares the referred proposal to be a Derived Proposal, there is no further assessment of that proposal and a notice will be issued by the Minister. The declared Derived Proposal will be subject to the relevant conditions of the Strategic Proposal Ministerial Statement, as outlined in the notice from the Minister. The EPA has an opportunity to recommend changes to the conditions to the Minister, prior to the notice being issued.

There are no appeal provisions relating to the EPA's decision to declare a Derived Proposal, its decision to refuse a declaration, or its determination as to whether or not to inquire into conditions (EPA 2012b). There is also no appeal in relation to the Minister's notice that specifies the coming into effect of the Strategic Proposal Ministerial Statement and any conditions that relate to the Derived Proposal.

If the EPA enquires into the conditions that apply to the Derived Proposal, there is no appeal in respect of the EPA's report to the Minister; however, the proponent can appeal any conditions that are set following that inquiry.

4.3 Commonwealth Process

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the Commonwealth Government's central piece of environmental legislation. It provides a legal framework to protect and manage nationally and internationally important aspects of the environment, defined in the EPBC Act as matters of national environmental significance (MNES). The nine MNES are:

- world heritage values of a declared world heritage property;
- heritage values of national heritage places;
- wetlands of international importance (often called 'Ramsar' wetlands after the international treaty under which such wetlands are listed);
- listed threatened species and ecological communities;
- listed migratory species;
- Commonwealth marine areas;
- the Great Barrier Reef Marine Park;
- protection of the environment from nuclear actions; and
- water resources in relation to coal seam gas development and large coal mining development.

The jurisdiction of the Commonwealth strategic assessment process is limited to MNES. Approval can only be granted if the Commonwealth Minister for the Environment considers that the proponent has adequately identified and addressed potential impacts to MNES, addressed requirements set out in the Agreement and provided for any modifications recommended by the Minister. At a broad level, the strategic assessment process occurs in two stages:

- assessment and endorsement of a 'policy, plan or program'; and
- approval of actions (or classes of actions) associated with the Program that will occur over time.

The EPBC Act prohibits certain actions from being taken in relation to MNES without approval under Part 9 of the EPBC Act. Such actions are called 'controlled actions'. The MNES to which controlled actions relate are called 'controlling provisions' A controlling provision is a provision of Part 3 of the EPBC Act which prohibits the taking of an action in respect of that provision without approval under Part 9 of the EPBC Act. The controlling

provisions that are relevant to the Proposal[2] are section 18 (listed threatened species and communities) and section 20 (listed migratory species).

BHP Billiton Iron Ore will be approved to take controlled actions in relation to controlling provisions under the Proposal where:

- the Minister has endorsed the Draft MNES Program under Part 10 of the EPBC Act; and
- the Minister has approved the taking of an action or class of actions identified in the Draft MNES Program in accordance with section 146B of the EPBC Act.

To address the Commonwealth Strategic Assessment, BHP Billiton iron Ore entered into an Agreement with the Commonwealth Minister for the Environment under section 146 of the EPBC Act, which was made publicly available for comment from 17 November 2012 to 18 January 2013. BHP Billiton Iron Ore is required to satisfy the Terms of Reference within the Agreement in developing an MNES Program and Draft IAR.

The Draft MNES Program (BHP Billiton Iron Ore 2016b) identifies the key commitments and undertakings of BHP Billiton Iron Ore for the protection and management of Controlling Provisions under the EPBC Act; and the Draft IAR (BHP Billiton Iron Ore 2016c), presents the findings of the environmental impact assessment undertaken to evaluate the potential impacts to MNES from the implementation of the Proposal. The Draft IAR will be considered by the Minister when deciding whether to endorse the Draft MNES Program.

[2] Proposal as per the scope defined in BHP Billiton Iron Ore's Pilbara Strategic Assessment MNES Program (BHP Billiton Iron 2016a).

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