Contents

Figures

1 Summary

This chapter describes the contracts that Snowy Hydro proposes to enter into for the Civil, Electrical/Mechanical (***E&M***) and Exploratory Works - Roads (***EWR***) packages to execute the Project.

1.1 Introduction

1.1.1 General

This chapter describes the contracts that Snowy Hydro proposes to enter into for the Civil, E&M and EWR Packages to execute the Project In particular, this chapter sets out:

1. The rationale for selecting the forms on which those contracts are based, being:
    a. Engineer-Procure-Construct (***EPC***) Contracts for the Civil and E&M Packages, based on the International Federation of Consulting Engineers (***FIDIC***) EPC/Turnkey (***Silver Book***) template; and
    b. a Construct-Only Contract for the EWR package based on the AS 4000-1997 form of Contract;
2. The process followed to develop and adapt the forms into the contracts issued to the market, with expert advice and assistance from international construction law experts;
3. The commercial risk allocation set out in the contracts; and
4. The status of the contracts as at Final Investment Decision (***FID***) and actions to negotiate and finalise the contracts with the successful bidders.

1.1.2 Scope and exclusions

Contract administration and the overall contractor selection process is covered in *Supporting Chapter Two - Procurement*.

Contract pricing and contingencies for retained risk under the contractual risk allocation is covered in *Supporting Chapter Four - Schedule, cost estimate and contingency.*

The Approvals process is detailed in *Supporting Chapter Eleven - Environment, permits and approvals*.

1.2 Activities Undertaken

During Feasibility, the strategy of splitting the Project into Civil and E&M packages and using an EPC Contract for each package based on FIDIC Silver Book was determined. Snowy Hydro communicated this strategy to prospective contractors during the Early Contractor Consultation (***ECC***) phase (see *Chapter Two* for rationale and process). Following extensive review, including external advice, and interactions with the market post-Feasibility, Snowy Hydro elected to proceed to tenders with modified EPC Contracts for the Civil and E&M packages broadly consistent with the Feasibility position.

Key activities included:

1. Developing and issuing an initial term sheet to the Civil tenderers for feedback;

2. Refinement of contract terms (internally and with external legal advisors), primarily through a series of risk workshops;
3. Developing and issuing draft contract terms to the Civil and E&M tenderers for feedback;
4. Market feedback and refinement of commercial terms through the interactive tender process;
5. Refinement of key commercial terms with the engineering and commercial teams; and
6. Issue of final contracts to tenderers. The description of the contracts in this chapter is based on those issued to the market.

1.3 Contract introduction

In order to execute the Project, Snowy Hydro proposes to enter into three contracts for the delivery of Project works in two phases: Exploratory Works and Main Works. In addition, Snowy Hydro has entered and will enter into a number of supporting contracts for Owner's Team's work such as geotechnical investigation, survey, environmental and other studies, and a range of contracts with various advisors and consultants to support the Owner's Team.

The three delivery contracts (which comprise the major portion of the scope of the Project) are:

1. EPC contract for the Civil Works Package (***Civil EPC Contract***);
2. EPC contract for the E&M Works Package (***E&M EPC Contract***); and
3. Construct-Only contract for the EWR Package (***EWR Contract***).

The EPC Contracts issued to the market for tender contain a reasonable risk allocation, which is consistent with the market for major infrastructure works, under which the Contractors are responsible for delivering the Project safely, providing a fixed price (subject to the risks retained by Snowy Hydro described in this Chapter) and delivering the Project by an agreed date for completion. The Contractors also take design risk to deliver a 'fit-for-purpose' design. Snowy Hydro takes the risks typically retained by an owner (eg tenure, site access and unforeseen delay events), along with risk under the Civil EPC Contract in relation to planning approval conditions and the geotechnical conditions encountered during tunnelling in the manner described below.

Under the Civil EPC Contract and the E&M EPC Contract, the Project will be delivered by one of the civil contract consortia (***Civil Tenderers***) and one of the E&M Original Equipment Manufacturers (***OEM***) (***E&M Tenderers***) which have tendered to deliver the Project in accordance with the EPC Contracts through the procurement process described in *Chapter Two*.

As at FID, Snowy Hydro has received tenders and identified a preferred E&M Tenderer (with a reserve tenderer as backup). The tenders received from the preferred E&M Tenderer and the Civil Tenderers have largely accepted the commercial terms and risk allocation proposed under the respective EPC Contracts, and are capable of negotiation to a conclusion by March 2019.

Snowy Hydro intends to continue to negotiate with the preferred Tenderers and conclude those negotiations before March 2019. Snowy Hydro's strategy has been to maximise competitive tension between the Tenderers during the negotiation period to improve Project outcomes (design and pricing), while seeking to further mitigate key risks such as design, approvals, geotechnical, and interfaces. In particular, the further negotiation period will allow Civil Tenderers to negotiate directly with the preferred E&M Tenderer to improve the interface coordination and determine if a single EPC Contract for execution of the whole Project can be achieved.

The base case contract structure divides the Project scope into two key packages: Civil Works and E&M Works. This structure was selected because Snowy Hydro wished to directly procure the E&M technology to be incorporated into the Project from one of the four preeminent OEMs worldwide. The E&M technology required for the Project is highly specialised, and our Project parameters are on the cutting edge of pumped-hydro technology and will be the source of long-term value for the Project. Snowy Hydro saw significant benefit in dealing directly with the OEMs in developing the requirements for the Project and testing the functionality of their technology.

There are advantages to pursuing a single 'wrapped' Contract for the whole Project, with the Civil Contractor as the Principal Contractor taking on Snowy Hydro's selected E&M Contractor as a nominated subcontractor. This option has been kept open throughout the process and remains available as at FID. A successfully negotiated contract wrap can mitigate the interface risk.

The scope under each of those contracts is divided into two stages: Exploratory Works and Main Works

The Contracts represent the output of significant due diligence and procurement and the risk allocation in the Contract is reasonable for the execution of the Project. This is supported by an external legal expert opinion in relation to the documents issued for tender.

1.4 Form of contract

In selecting the form of contract for delivering the Project, Snowy Hydro considered its recent experience in constructing large hydropower projects, accepted contracting practice for the delivery of large infrastructure projects both in Australia and internationally, the capability and resources available in the market, and generally understood commercial and contractual principles.

Snowy Hydro considered the range of contract delivery models available and settled on an EPC Contract for the main works package. The primary driver behind the section of the EPC model is the allocation of design and execution risk. Under an EPC Contract, a single contractor takes responsibility for all elements of design, procurement, and construction, and is responsible for providing fully-equipped Facilities, ready for operation (on a 'turnkey' basis'). In addition, the other principal benefit to Snowy Hydro of an EPC contract is that the Contractor takes full responsibility for the cost of completion, the time for completion, the quality of the works delivered under the Contract and the final

performance of the Facilities. Snowy Hydro gets the advantage of world-leading expertise in the design and construction of these facilities.

Given the international field of potential contractors, the preference was to base the Contract on a mature, internationally recognised standard for infrastructure development. FIDIC provided a market preferred suite of Contracts for EPC infrastructure works, and also included an appropriate base risk allocation. For this reason. Snowy Hydro elected to pursue a 'modified' EPC contracting strategy for the major packages, based on the FIDIC Silver Book.

1.5 Civil and E&M EPC contract structures

1.5.1 Contractual risk allocation

A 'risk-free' Contract is not feasible for this (or any large infrastructure) Project. The template Silver Book incorporates a risk allocation between the Employer and Contractor, under which the Contractor bears all delivery risks except those set out in the table below, and provides a 'fit-for-purpose' warranty for the ultimate deliverables. This template has been adjusted to allow for a number of risk re-allocations, to better align it to market norms, Snowy Hydro's requirements and the context of this Project, particularly in relation to safety, interface, approvals and geotechnical risk.

The risk allocation is likely to be moderately adjusted during the negotiation phase if that will improve Project outcomes.

1.6 EWR contract

Snowy Hydro identified a credible opportunity to accelerate the Project schedule by undertaking some civil access works early. Access roads to the Main Access Tunnel (***MAT***) portal and other early works areas were, therefore, carved out from the main Civil Works Package and tendered separately to local civil contractors on a construct-only basis.

The selected form of Contract is a modified AS 4000 Contract. This form of Contract has been used many times by Snowy Hydro for civil projects of a similar scale and contains a reasonable and appropriate risk allocation for construct-only civil works.

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2 Activities undertaken

The base case contract structure was reviewed extensively post-Feasibility to ensure that the contract structure pursued is the most appropriate in light of the Project's scale, risks and proposed schedule. Snowy Hydro considered alternative contracting approaches and alternatives to the Silver Book, and ultimately elected to proceed with the contract structure and form of contract outlined above, and the contracts were developed on this basis.

The description of the Contracts contained in this chapter is of the final EPC Contracts as issued for tender.

A description of the EWR Contract is separately set out in the *EWR Contract* section below.

3 Contract introduction

3.1 Overview

This chapter sets out the EPC Contracts which were issued for the tender. This risk allocation is reasonable for the Project and within the market, as confirmed by external expert opinion.

The Company has separately tendered the EWR Contract to accelerate the Project schedule. It is relatively small in the context of the Project and is separately discussed in the *EWR Contract* section below.

3.2 Overview of EPC Contracts

The relationship between the two EPC Contracts and Snowy Hydro under the base case Contract structure described above is shown in Figure 1.

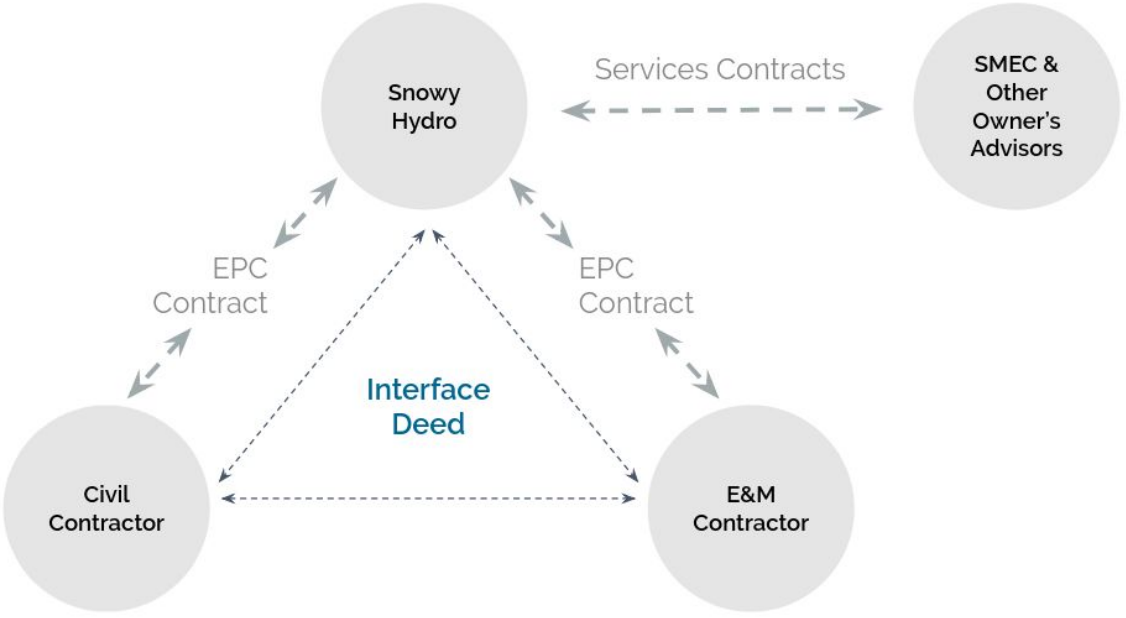

Figure 1: Base case contract structure overview

he tenderers for each Contract package have been asked to propose single Contract alternatives as part of the Procurement process, and these will be pursued during Contract negotiations if they represent an advantage to the Project. This chapter is drafted based upon the base case contract structure.

For the purposes of the Feasibility Study, Snowy Hydro proposed to execute the Contract through Design & Construct (***D&C***) or EPC Contracts. An initial step in the Feasibility-FID process was to review the contracting strategy. This review included workshops with the Project Team and presentations and discussions with the Snowy 2.0 Governance Committee.

Snowy Hydro elected to pursue a 'modified' EPC contracting strategy for the major packages, based on the FIDIC Silver Book. The choice offered flexibility while maintaining a mix of design responsibility for Snowy Hydro and acceptability in the marketplace, both Australian and internationally.

Like any other large infrastructure project, a risk-free contract to Snowy Hydro is not feasible given the size and scope of the Project, as the capital cost would be extortionate. Accordingly, the solution proposed offers a balance between Snowy Hydro's level of involvement and exposure. This solution comprised two EPC contracts, with modifications including several critical risk-sharing mechanisms, connected by a bespoke Interface Deed, along with the relatively small (in the context of the Project) EWR Contract. Under the base EPC contract, the Contractor bears most of the delivery risks is responsible for delivering its scope on a broadly 'fixed time, fixed price' basis and provides a 'fit-for-purpose' warranty for the ultimate deliverables within its scope. This template has been adjusted to allow for a number of risk re-allocations, to better align it to market norms.

As at FID, the EWR Contract has been awarded to Leed Contractors. Tenders have been received and are being evaluated for the Civil EPC Contract and E&M EPC Contract. The scope under each of those Contracts is divided into two stages: Exploratory Works and Main Works, with the Main Works to commence subject to further Approvals. The contractor selection progresses with the award of each EPC Contract (or a single Contract if that is negotiated and preferable) by the end of March 2019. Amendments to the Contract during negotiations will only be considered where there is a benefit to Snowy Hydro.

Finally, in order to supplement its Owner's Team, Snowy Hydro has committed and will need to commit many contracts in the course of the Project for specialists and owner's advisors (including major advisors such as SMEC). These can largely be dealt with through standard Project procurement processes and utilising Snowy Hydro's Standard Form Contracts.

Note: the form of contract and contractability is only one aspect of contractor selection. See *Supporting Chapter Two - Procurement* for the treatment of other contracts and how (more broadly) the contractor selection process has been undertaken to date.

4 Form of contract

In selecting the form of contract for delivering the Project, Snowy Hydro considered its recent experience in constructing large hydropower projects, accepted contracting practice for the delivery of large infrastructure projects

both in Australia and internationally, the capability and resources available in the market, and generally understood commercial and contractual principles.

Snowy Hydro considered the range of contract delivery models available and settled on an EPC Contract for the main works package The primary driver behind the section of the EPC model is the allocation of design and execution risk. Under an EPC Contract, a single contractor takes responsibility for all elements of design, procurement, and construction, and is responsible for providing fully-equipped Facilities, ready for operation (on a 'turnkey' basis'). In addition, and subject to the specific contractual risk allocation outlined below, the other principal benefits to Snowy Hydro of an EPC contract is that the Contractor takes full responsibility for the cost of completion, the time for completion, the quality of the works delivered under the Contract and the final performance of the Facilities. Snowy Hydro gets the advantage of world-leading expertise in the design and construction of these facilities.

Given the international field of potential contractors, the preference was to base the Contract on a mature, internationally recognised standard for infrastructure development. FIDIC provided a market preferred suite of Contracts for EPC infrastructure works, and also included an appropriate base risk allocation. For this reason. Snowy Hydro elected to pursue a 'modified' EPC contracting strategy for the major packages, based on the FIDIC Silver Book.

5 Civil and E&M EPC Contract Structures

5.1 Contractual risk allocation

5.1.1 Overview of risk allocation

As noted above, a 'risk-free' Contract is not feasible for this Project. The template FIDIC Silver Book Contract incorporates a risk allocation between the Employer and Contractor, under which the Contractor bears most, but not all, delivery risks and provides a 'fit-for-purpose' warranty for the ultimate deliverables.

This basic model has been adjusted to allow for a number of risk re-allocations, to better align it to market norms, Snowy Hydro's requirements and the operating context, including:

1. Integrated safety obligations for the Civil Contractor;
2. Risk allocation mechanisms for Approvals risk and geotechnical risk;
3. Market practice (based on external advice) for limitations of liability and caps on liquidated damages; and
4. Updated positions based on feedback during the interactive tender phase.

The risk allocation will be adjusted during the negotiation phase if that will improve Project outcomes.

This section discusses the material Project risks that are wholly or partly managed through contractual risk allocation, which are set out in Table 1 above.

It does not discuss the management of owner-retained risks, eg through financing.

6 EWR Contract

It was noted at Feasibility that an Exploratory Works program could potentially de-risk and accelerate the Main Works. While the simplest approach would have been to execute the exploratory works under the main civil contract, Snowy Hydro identified a credible opportunity to accelerate and reduce overall Project risk by undertaking some civil works early. Access roads were, therefore, carved out and tendered separately to local civil contractors on a construct-only basis.

The form of this Contract is a modified Australian Standard 4000 Contract, which has been used many times by Snowy Hydro to execute large civil projects and so was considered appropriate for the access roads package of Exploratory Works).

7 Definitions and abbreviations

D&C	Design & Construct
E&M	Electrical/Mechanical
ECC	Early Contractor Consultation
EPC	Engineer-Procure-Construct
EWR	Exploratory Works - Roads
FID	Final Investment Decision
MAT	Main Access Tunnel
OEM	Original Equipment Manufacturers

8 Bibliography

There is no bibliography for this chapter.