

# Lower Churchill Project 5 – Contracting Strategy and Process June 2018

Boundless Energy



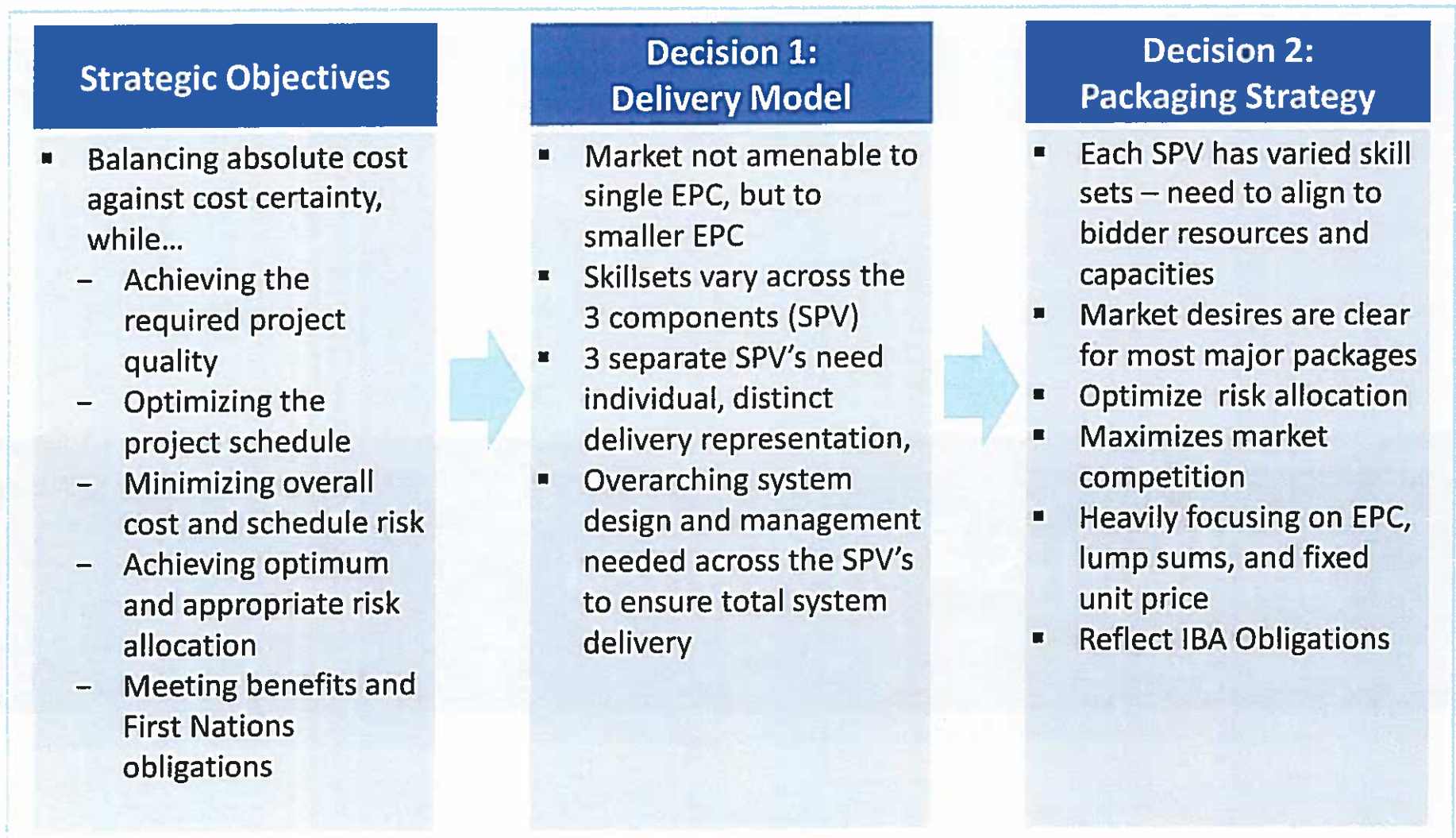
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# Objective

1. To provide clarity on the basis of the project contracting plan and packaging strategy for Muskrat Falls
2. To explain the contracting procurement process for Muskrat Falls

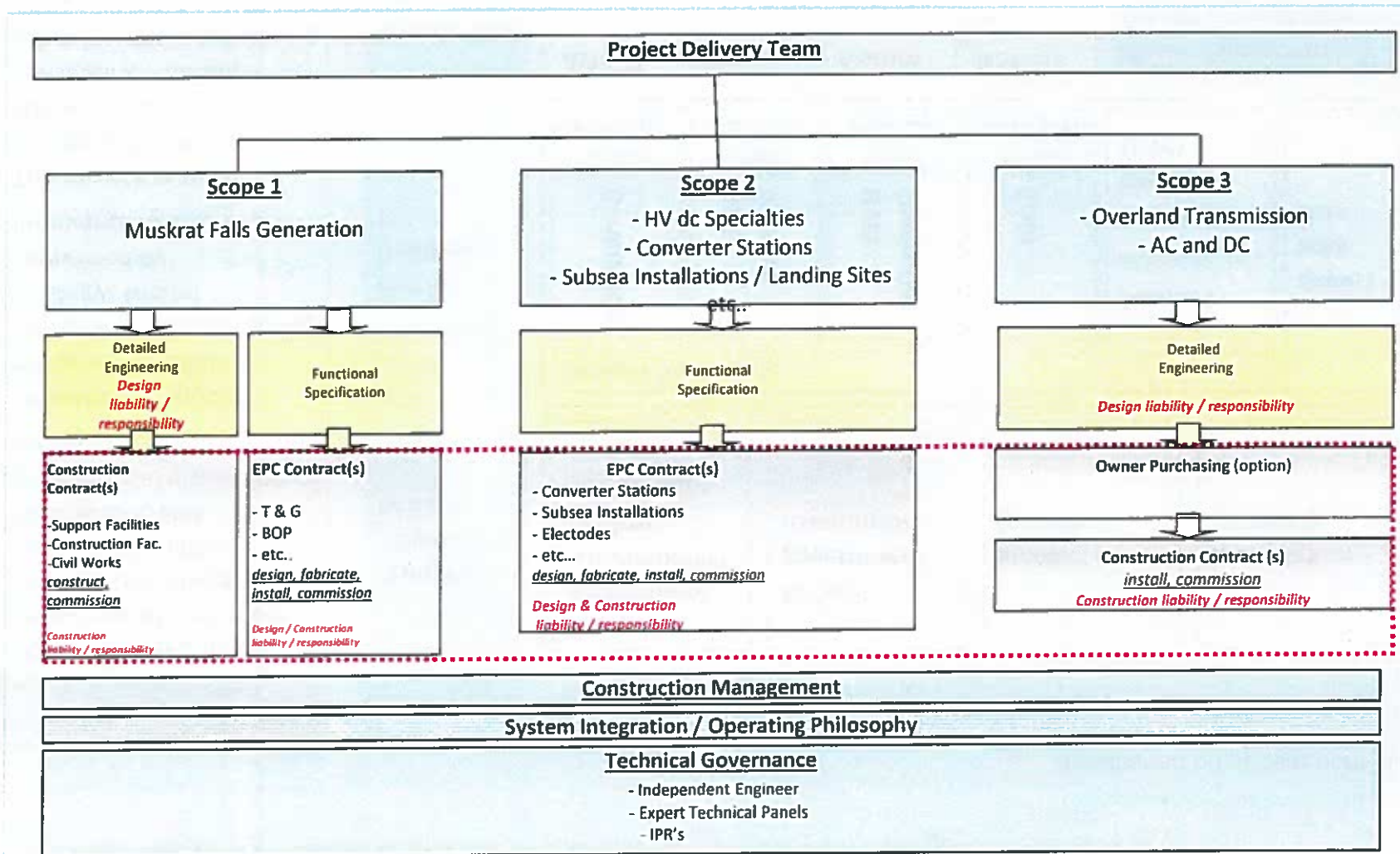
# Contracting Strategies

## Packaging strategy development





## Contract strategies within the components



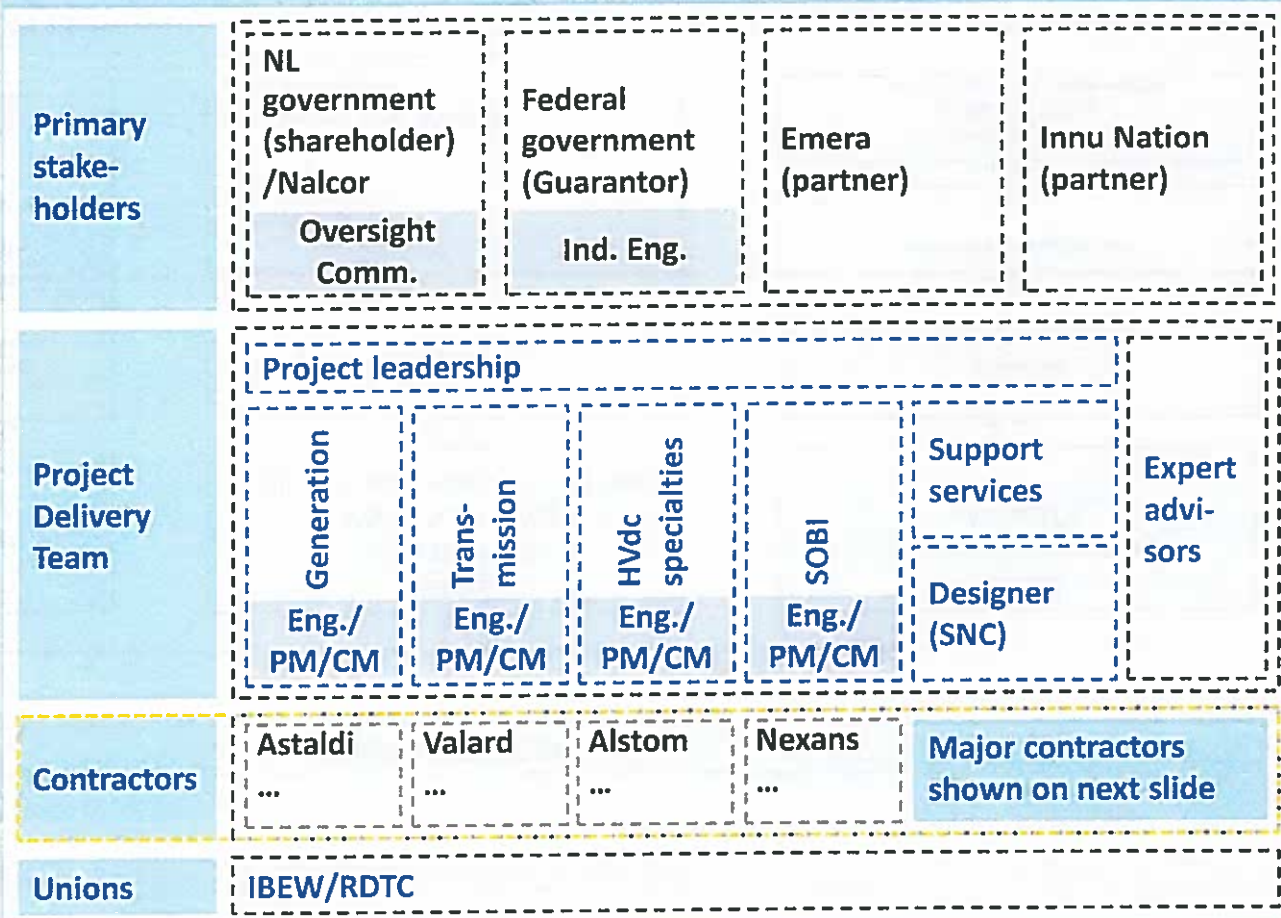
## Construction contracts within the meta-organization

 Discussed on subsequent slide

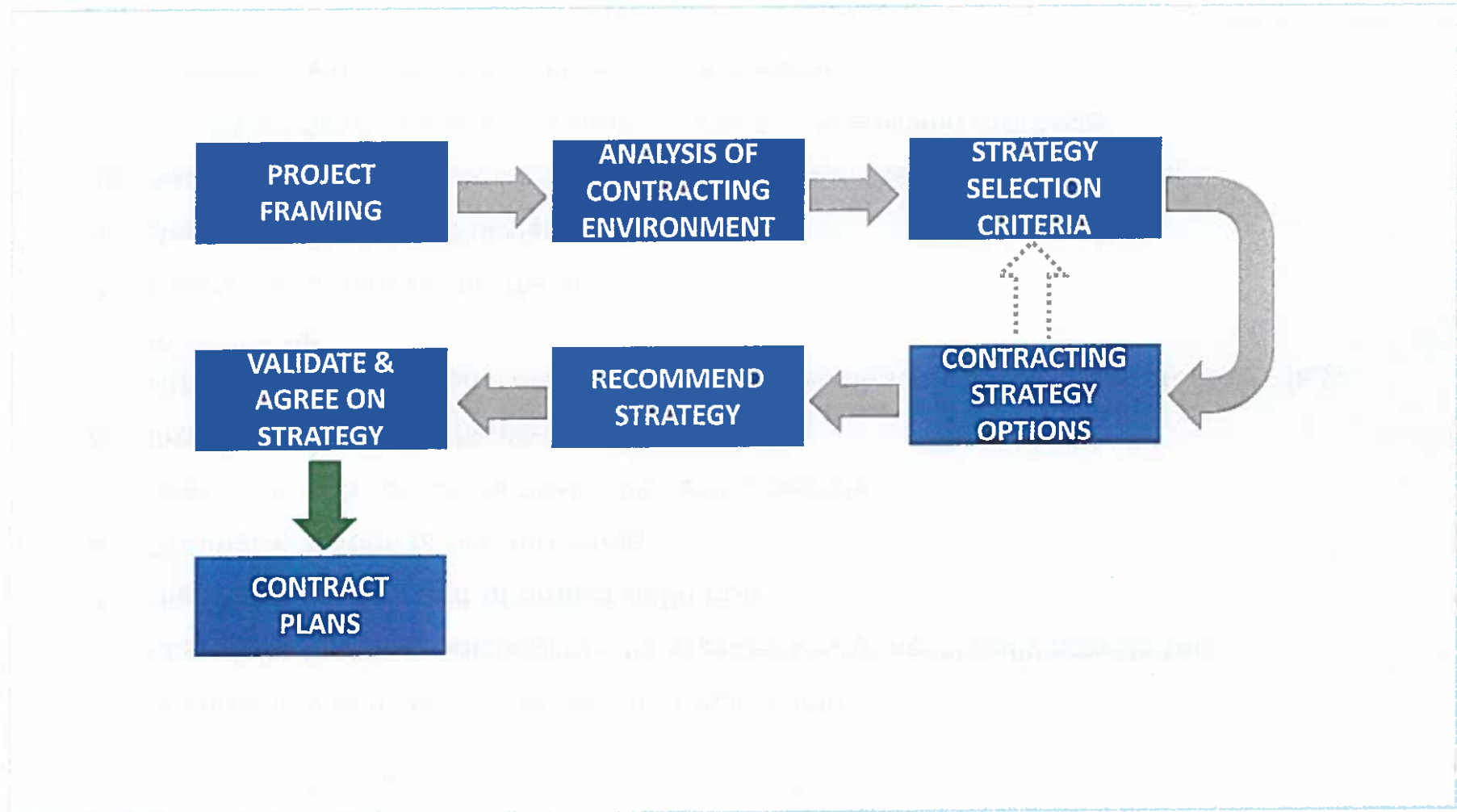
### Details of Delivery team

- LCP is managed by an integrated project team concept to manage the many stakeholders, contractors, and geographical dispersion of the work
- Organization model designed to reflect execution and contracting strategy. Model supported by Independent Eng. and IPA
- The project team is staffed with a mix of Nalcor personnel, consultants, staffing agencies, and engineering companies (e.g., SNC, Hatch)

### Delivery team is organized to manage contractors and interface with stakeholders



## Contracting strategy evaluation process



## Typical drivers and selection criteria

1. Alignment with financial strategy and requirements
2. Cost and schedule predictability – fixed prices do not necessarily provide this
3. High FEL / achievement of project definition
4. Optimal allocation of risk and scope
5. Alignment with contractor availability and capability
6. Propensity for scope change
7. Utilize intelligently sized, competitively bid fabrication and construction contracts (e.g. mixed model)
8. Awareness of natural interfaces
9. Degree of definition of design
10. Awareness of work type and varied skill sets within the SPV's
11. Integrated team capacity to manage – people, systems and processes
12. Alignment with Provincial Policies / IBA Agreement



## Sample sources used for market intel

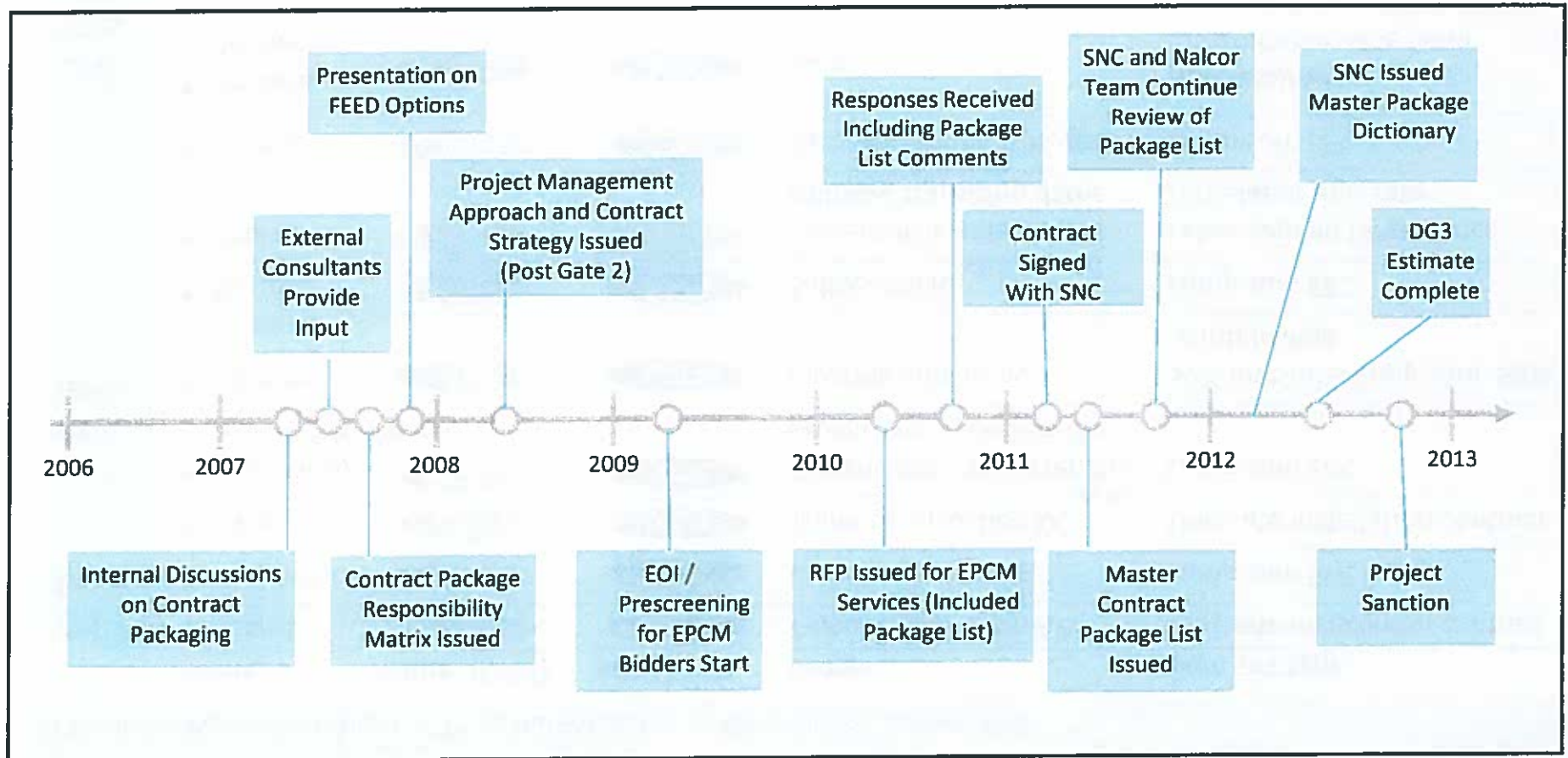
■ Key IPA published findings shown on subsequent slide

- **LCP Delivery Team experience** – hundreds of years combined megaproject and Hydro and Transmission experience
  - **Local projects** – local industry analysis and comparisons
  - **Market Intelligence** / visits by LCP staff
  - Participation in the **Canadian Electrical Utilities Project Management Network Group**
  - Other **Hydro Companies**, e.g., Landsvirkun Power
  - **Industry Organizations**, e.g., The IPA Institute (division of Independent Project Analysis Inc.)
- IPA recommends a mixed strategy of reimbursable and lump sum elements that graduate to the latter without using incentives as the scope and risks become more defined

## Key IPA published findings – LCP-PT-MD-0000-PM-ST-0002-01

- ✓ Megaprojects with large EPC lump sum contracting schemes fail more often than non-lump sum schemes
- ✓ Maintaining continuity of the FEED contractor into the execution does not help, and may hurt
- ✓ Strong, sizeable owner teams actively managing the project are almost necessary for project success
- ✓ Owner's hoping to execute successful megaprojects "on the cheap" will be disappointed
- ✓ Risk premium for large "international" projects is 10 to 15 percent of the base estimate
- ✓ Mandating EPC lump sum to meet government requirements translates into 20 plus percent increase over a non-lump sum EPC
- ✓ Risk premiums tend to increase with onerous local content requirements (e.g. manhour targets, harsh environments / climate, concurrent large projects in the region, high potential for labour shortages)
- ✓ Risk premiums can be significantly reduced by the Owner assuming some of the risk; in particular those risks outside the contractor's control (i.e. strategic risk)

# Contract Packaging Development Timeline



The contract model is geared toward major contractors, with larger scopes using fixed-pricing to the extent practical

LCP contractors with scopes >C\$100 million account for ~63% of current AFE

|                       | Name                               | Value <sup>1</sup> (C\$M) | %Complete | Scope  | Contract type                                     |
|-----------------------|------------------------------------|---------------------------|-----------|--|---|
| <b>LTA<br/>(100%)</b> | ■ Valard                           | 270                       | 100%      | T-line construction AC                                 | Unit-rate installation contract                   |
|                       | ■ Grid Solutions                   | 210                       | 100%      | CF/MF switchyards                                      | Lump sum EPC                                      |
| <b>LITL<br/>(99%)</b> | ■ Valard                           | 1,080                     | 100%      | T-line construction DC                                 | Unit-rate installation contract                   |
|                       | ■ Grid Solns/<br>Alstom Ren. Power | 825                       | 97%       | Switchyards, converter stn.,<br>synchronous condensers | Lump sum EPC                                      |
|                       | ■ Multiple                         | 430                       | 100%      | Clearing and access                                    | 50% unit-rate/lump sum, 50%<br>reimbursable       |
|                       | ■ Nexans                           | 140                       | 100%      | Subsea cable   | Lump sum EPC                                      |
| <b>MFG<br/>(81%)</b>  | ■ Astaldi                          | 2,000                     | 90%       | Powerhouse, intake, and<br>spillway, transition dams   | Labor capped target-price<br>/non-labor unit-rate |
|                       | ■ Andritz                          | 540                       | 75%       | Turbines, generators, gates                            | Lump sum EPC                                      |
|                       | ■ Barnard<br>Pennecon              | 420                       | 60%       | Dams   | Non-labor unit-<br>rate/reimbursable labor        |
|                       | ■ Cahill-Ganotec                   | 210                       | 20%       | Balance of plant                                       | Material unit<br>rate/reimbursable labor          |
|                       | ■ Gilbert                          | 155                       | 100%      | North Spur stabilization                               | Reimbursable                                      |
|                       | ■ Johnsons                         | 130                       | 100%      | Reservoir clearing                                     | Lump sum  |

1 Approximate Forecast Value (April 2018)

LOWER CHURCHILL PROJECT



# Key contracting strategy documents

Nalcor Energy – Lower Churchill Project



Project Management Approach and Contracting Strategy (Post Gate 2)

LCP-PT-MD-0000-PM-ST-0001-01

Overarching Contracting Strategy

LCP-PT-MD-0000-PM-ST-0002-01

|           |             |   |  |  |                                       |  |
|-----------|-------------|---|--|--|---------------------------------------|--|
| Comments: |             |   |  |  | Total # of Pages<br>(including Cover) |  |
|           |             |   |  |  | 106                                   |  |
| #1        | 31-Nov-2010 | Approved for<br>Use /<br>Implementation | <i>[Signature]</i><br>S. McClelland<br>11 Egan | J. Kavan<br>C. Lawrence<br>K. Power<br>P. Harrington |                                       |  |

Muskkrat Falls & Island Link Master Contract Package List

LCP-PT-ED-0000-SC-LS-0001-01

|   |                                       |
|---|---------------------------------------|
| Comments:   | Total Page Count<br>(including cover) |
| Updated for Gate 2 purposes. Includes both Muskkrat Falls and Island Link Projects. | 14                                    |
| For information related to Gull Island see MSD-MM-013                               |                                       |

**CONTRACT STRATEGY**

Project: LCP-PT-MD-0000-PM-ST-0001-01

Version: 1.0

Author: S. McClelland

Approved: J. Kavan

Comments: [Blank]

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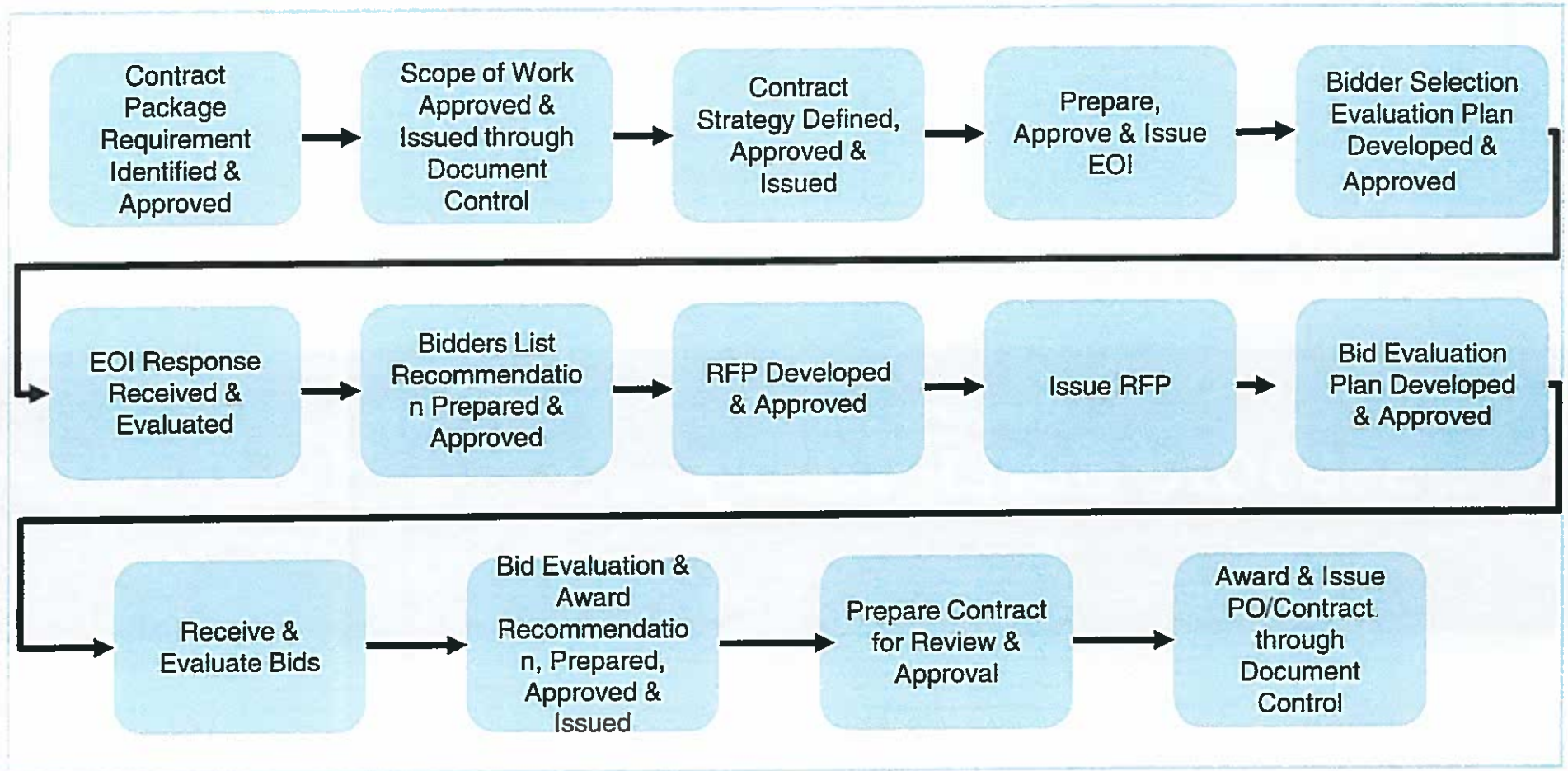
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## Independent and third party reviews/approvers of overall strategy and contract approaches

- Rating Agencies – DBRS, Moody's, S&P
- Independent Engineer (MWH)
- Federal Government Legal and Financial Advisors
- IPA
- EY

# Contracting process

## Contracting/procurement process





## All procurement approvals are outlined in LCP Approval Matrix for key procurement recommendations

- Contract Package list is developed and approved
- Bidder Selection Evaluation Plan is developed and approved prior to evaluation of questionnaires
- Bidder List Recommendation prepared and approved prior to RFP being issued
- Bid Evaluation Plan is developed and approved prior to proposals being opened and evaluated
- Bid Evaluation and Award Recommendation prepared, approved and issued
- Contract is prepared, reviewed and approved prior to issue to Contractor

## All procurement approvals are outlined in LCP Approval Matrix for key procurement recommendations (cont'd.)

- Bidders are requested to submit commercial and technical proposals separately
- Bidders submit proposals via a sealed bid process
- Bid evaluation plan must be approved prior to bid opening
- Bid receipt and opening recorded by commercial team only
- Commercial team evaluates commercial proposal in isolation of other team members (i.e. technical, H&S, QA, benefits, finance, legal etc.)
- Bid clarifications held with bidders; bid clarification meetings held as required; commercial clarifications kept separate from technical
- Nalcor corporate due diligence and cold eyes review teams engaged per the LCP Approval Matrix for Key Procurement Recommendations
- Top material contracts approved by Independent Engineer, Legal Counsel and Financial Advisors for the Federal Government

## Industrial benefit approach

- Full and fair opportunity
- International competitive bidding process
- The project must adhere to provisions of:
  - Impacts and Benefits Agreement with Labrador Innu
  - NL Benefits Strategy
  - NL/NS Benefits Memorandum of Understanding