

UQBA x Connell Griffin Consulting Case
Competition 2025



Procurement, Regulation, Options

Will Liu





Question

With the needs for **resources** and **projects**, how can the Queensland government and/or industry **prioritise infrastructure** investment over the next 10 years?



Applications

Optimising Procurement

Long-term contracts reduce risk, secure pricing, and attract private investment in procurement.

Streamlining Governance

Reduce delays in infrastructure release to reduce private companies walking away from investment.

Strengthening PPP

PCOA reduces misallocation of risk, in efficiency and asymmetry within Public-Private partnerships.



PRO Strategy

1

Procurement

Establishing a regulated PPA market ensures cost certainty, attracts investment, and improves infrastructure delivery outcomes.

2

Regulation

Introduce a PFI Act and Infrastructure Bureau to regulate the Australian Infrastructure sector to improve project completion.

3

Options

Introduce PCOA, to address PPP issues and maximise mutual benefit for both parties.



Impact

15%

Increase in annual operating cash flows for infrastructure projects that implement PPAs ¹

26%

Decrease in expenditure during planning phase when implementing PFI procedures ²

\$802M

Decrease in Capital Expenditure by Eliminating Unnecessary costs through PRO implementation (Case Study)

Sources: Montel Energy (1), European Investment Bank (2)

Queensland Infrastructure: Challenges, Costs, and Capacity Constraints

Key Infrastructure Challenges in Queensland



Increased Infrastructure Costs due to supply chain disruptions post COVID – 19 has left many subject vulnerable to cost blowouts⁴.



Recent **Trade Protectionism** of tariffs on steel are likely to further exacerbate already high supply chain costs, creating further uncertainty around costs of long-term projects.



Skilled labor shortage leading to poor financial and procedural management of projects⁵.

Industry Drivers 2025-2035



Net Zero
Transition



2032
Olympics



Climate
Resilience



Population
Surge

Implications

Renewable
infrastructure
mandate²

\$8.1B in social and
economic benefits
for QLD¹

**Queensland
Climate Adaption
Strategy**¹

Increased transit
and **housing
demand**

Industry
Response

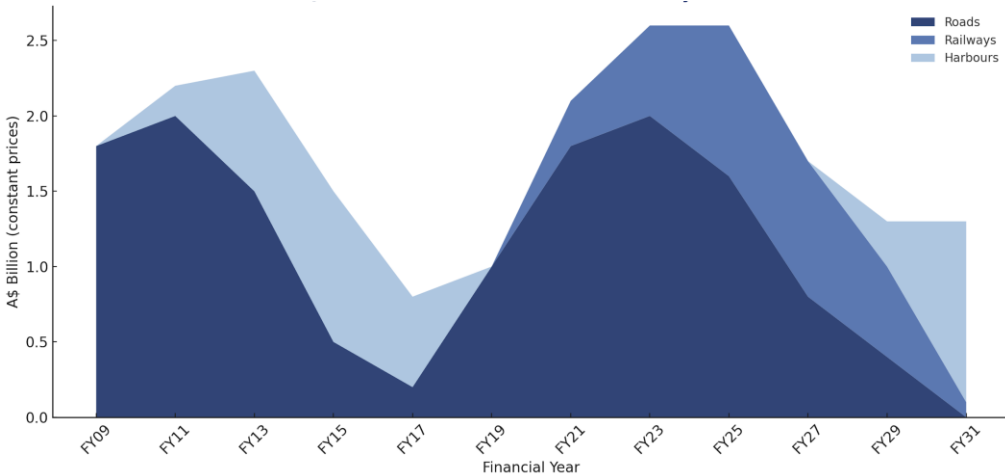
Preference of
green projects

Streamlined
approvals and
procurement
processes

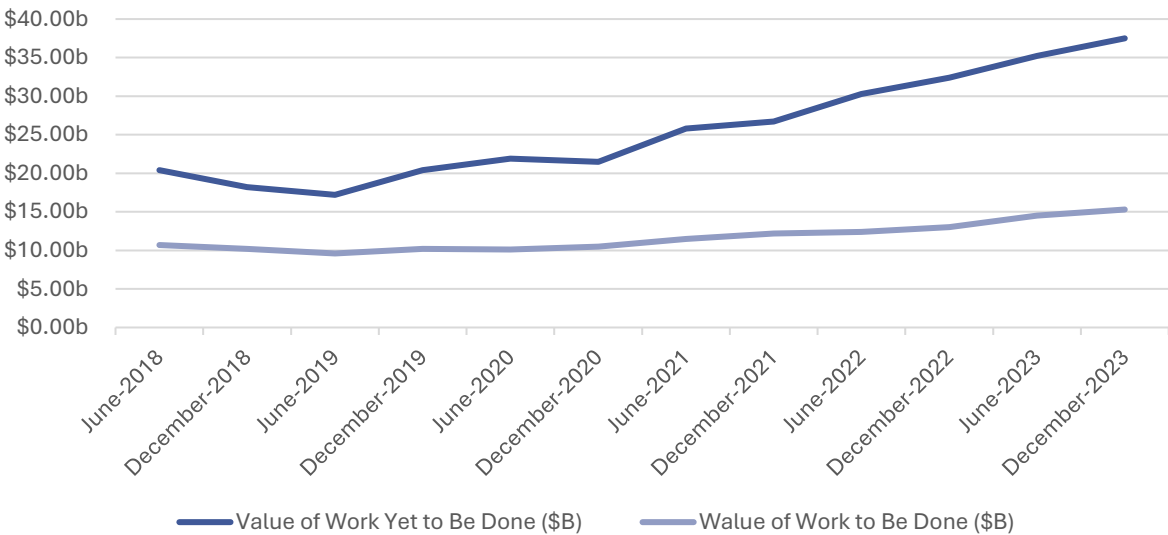
Climate resilience
a **key
consideration** in
builds

Increased
funding to
housing plans
within QLD Gov

Major Infrastructure Expenditure¹



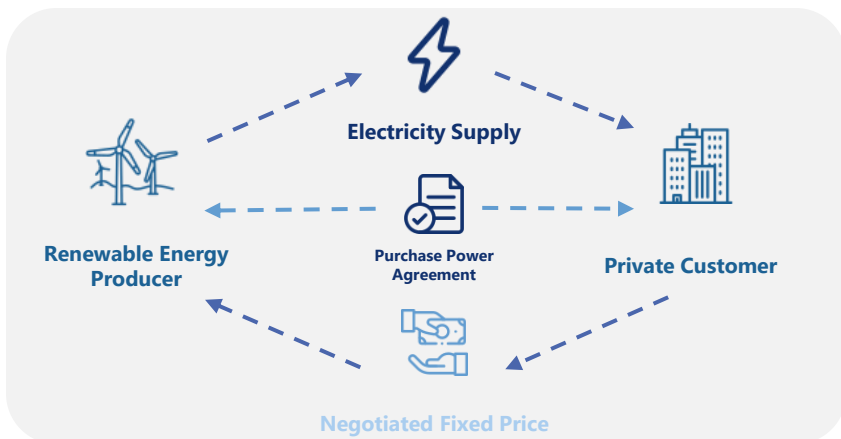
Unfinished Work at All Time High³



Sources: QLD Government (1), Australian Government (2), CSQ (3), EY (4), QLD audit office (5)

Driving Investment through Purchase Power Agreements

Purchase Power Agreement Process



Stakeholder Benefits from PPAs

Private Sector



PPAs provide **guaranteed cash flows** over the long term, reducing market risk and making projects bankable



Investors are more willing to provide funding with PPAs in place to generate certainty boosts to **IRR and NPV** of projects

Government Sector



Governments can use PPAs to directly support new renewable capacity aligning with their **net-zero commitments** ³



By securing private capital through PPAs, governments **don't need to fully fund** generation infrastructure

Sources: Dimension Market Research (1), World Bank Group (2), Energy Co (3)

PPA Market Implementation Statistics

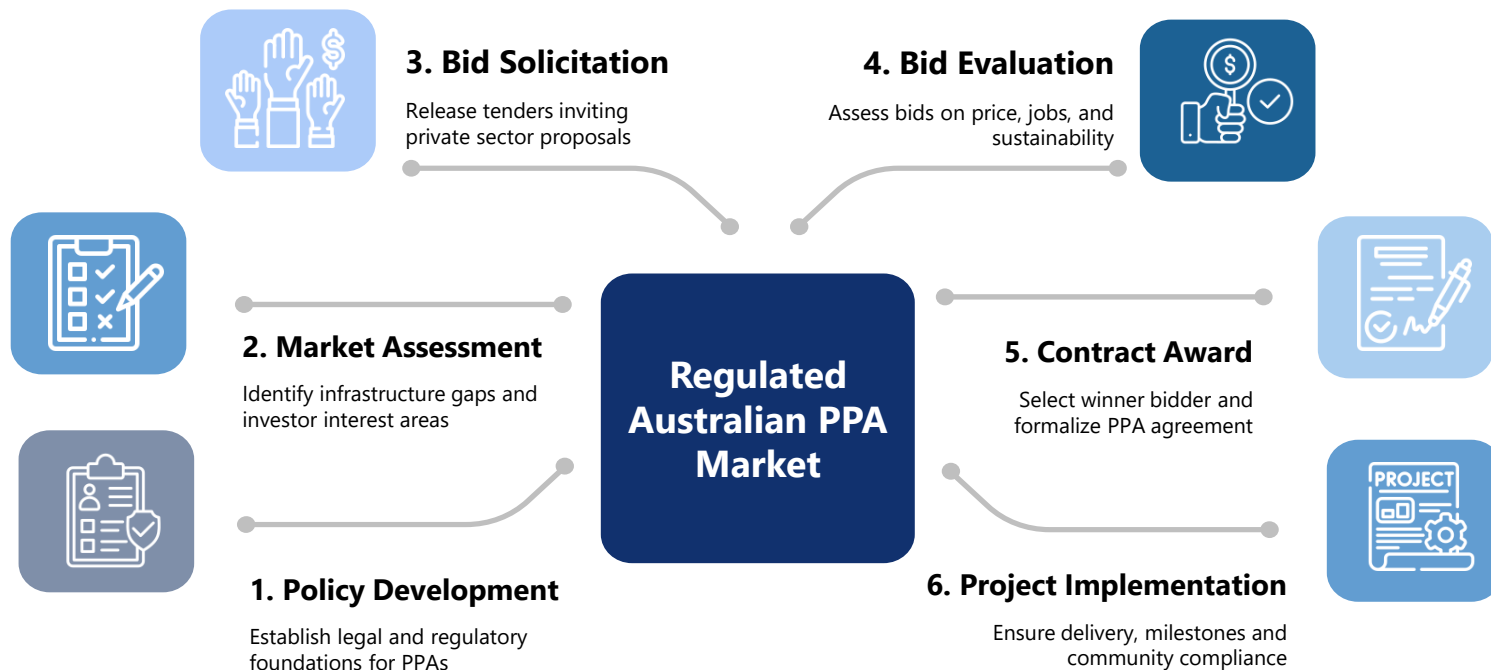
32.8%

Projected CAGR of Global PPA market demand, reaching a \$7.65T market value ¹

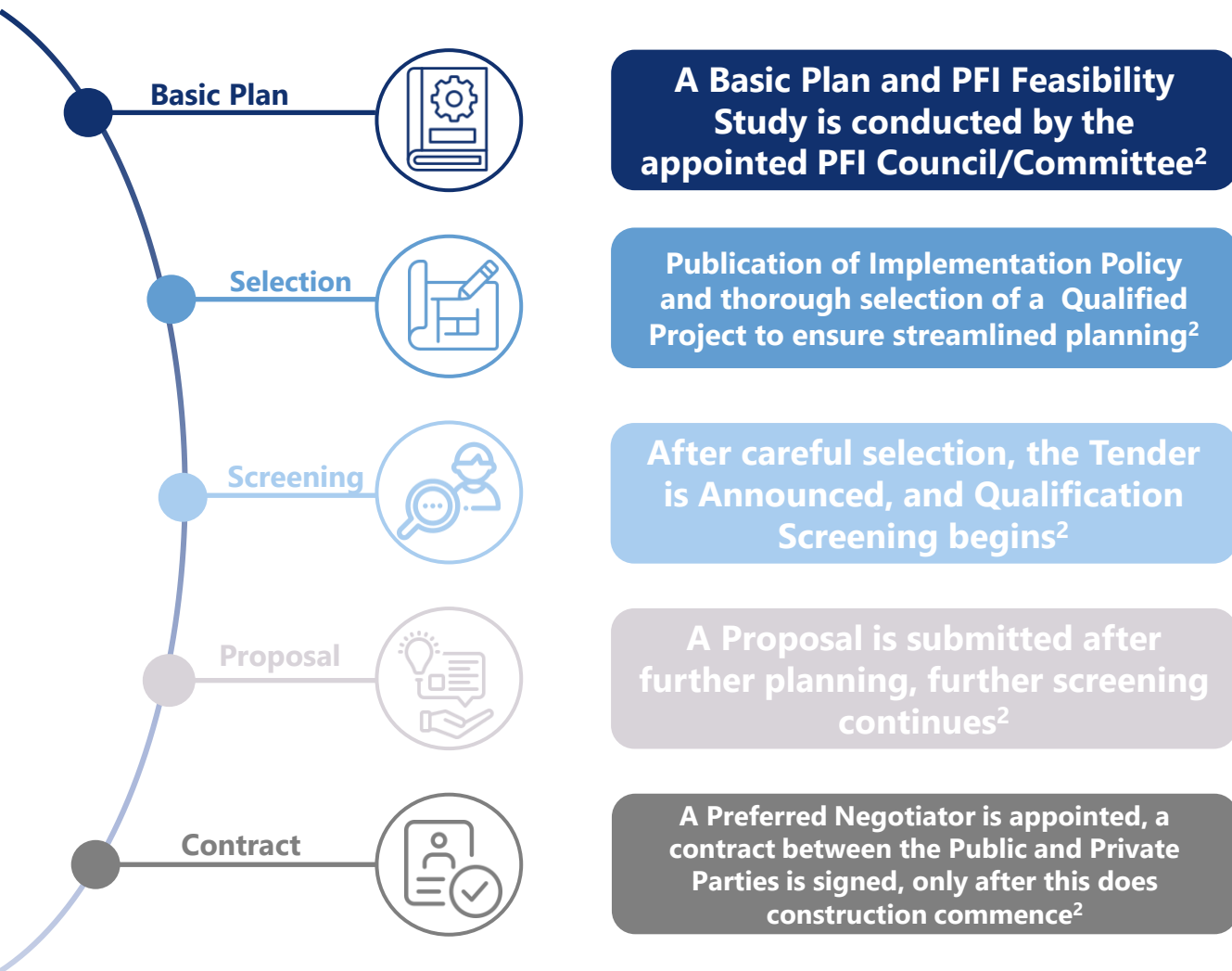
68%

Cost reductions in renewable energy tariffs over a short period once market program implemented ²

Proposed Australian PPA Framework



PFI Act Proves Viable to Regulate Queensland Government



Sources: European Investment Bank (1) King and Wood Mallesons(2) FLYEYE (3)

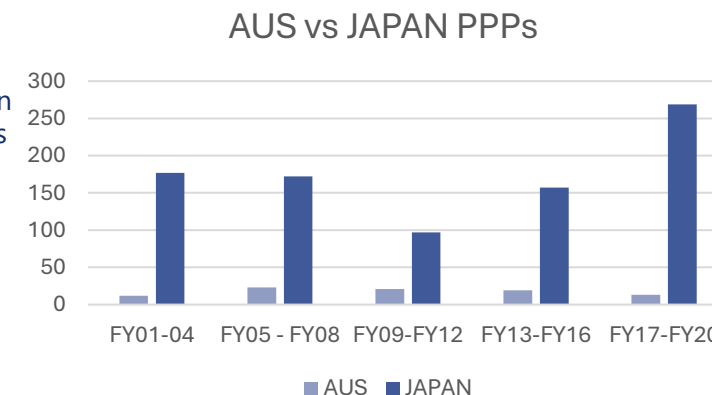
Streamline Governance to Implement PFI Proceedings

- 1** The **PPP/PFI Promotion Office**, has jurisdiction over the PFI Act and is responsible for promoting PPP/PFI in Japan³
- 2 Multiple Bureaus:** MLIT is structured into several bureaus and agencies, including infrastructure responsible for different sectors of land use³
- 3 National Land Planning:** MLIT is responsible for creating and implementing land use plans, including urban development, environmental conservation, and disaster mitigation strategies³

Capital Expenditure Reduction

26%
Decrease in expenditure when implementing PFI procedures in planning phase¹

24%
Decrease in time taken to produce contractual agreements¹

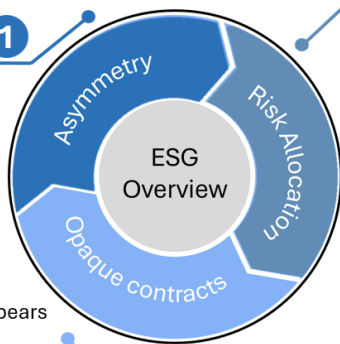


Enhancing Public-Private Partnerships through Call and Put Options

Debunking PPP

Asymmetric Partnership² 1

- **Unequal Exit Options:**
PP can exit on-going projects; governments locked into inflexible long-term contract
- **Undermines Partnership:**
Asymmetry prevents genuine, cooperative risk-sharing.
- **Imbalanced Risk and Reward:**
PP capture upside gains; public bears long-term losses and fallout.



Misallocation of risk¹ 2

- **Risk offloading:**
Misguided belief that unloading risk during early project stage yields best financial outcomes.
- **Demand risk misallocation:**
Misallocation of to PP despite the public sector better equipped to manage it
- **Public policy:**
Especially evident when demand is shaped by public policy (e.g., urban planning, taxes, school years).

Inefficiency in contracts² 3

- **Bundled Contracts:**
Project elements merged into one contract, reducing transparency.
- **Accounting incentives:**
Contracts structured as operating leases to avoid debt on public balance sheets.
- **Excessive Risk Shift:**
Achieved through excessive risk offloading, ignoring opportunities allocate risks optimally.



Case Study Example



- 1
 - RiverCity exited via **receivership** when traffic volume fell
 - Brisbane Council left managing the **aftermath** and **reputational damage**
- 2
 - Government has **control over key demand levers**
 - **Excessive** demand risk transferred to RiverCity causing **collapse**
- 3
 - **Overestimated** traffic forecasts
 - Failure led to a **\$1.5B write-down**, exposing **undisclosed issues** to the public

Put and Call Option Agreements (PCOA)^{2,3}



A **call option** enables the government to “**buy**” the project contract from the private partner.

- Gives **government** the right, but not the obligation, to purchase PP stake
- **Mandatory buyout** by the PP at a valuation based on remaining contract value
- Executed via **contractual clause** that defines scope, pricing method, and transfer timeline.



A **put option** enables the private partner to “**sell**” the project contract to the government.

- Gives **PP** the right, but not the obligation, to sell its stake in the project to the government
- **Mandatory buyout** by the government at a valuation based on DCF of remaining services
- Executed via **contractual clause** that defines scope, pricing method, and transfer timeline.

Addressing PPP Issues with PCOA

Implementation



Embed Put and Call Options into PPA Contracts.



Exercisable options by both parties at defined intervals or upon early termination.



Link Option Execution to Regular Independent Valuation Reviews

What it addresses



Incentivises risks to be² allocated to the party best able to manage them



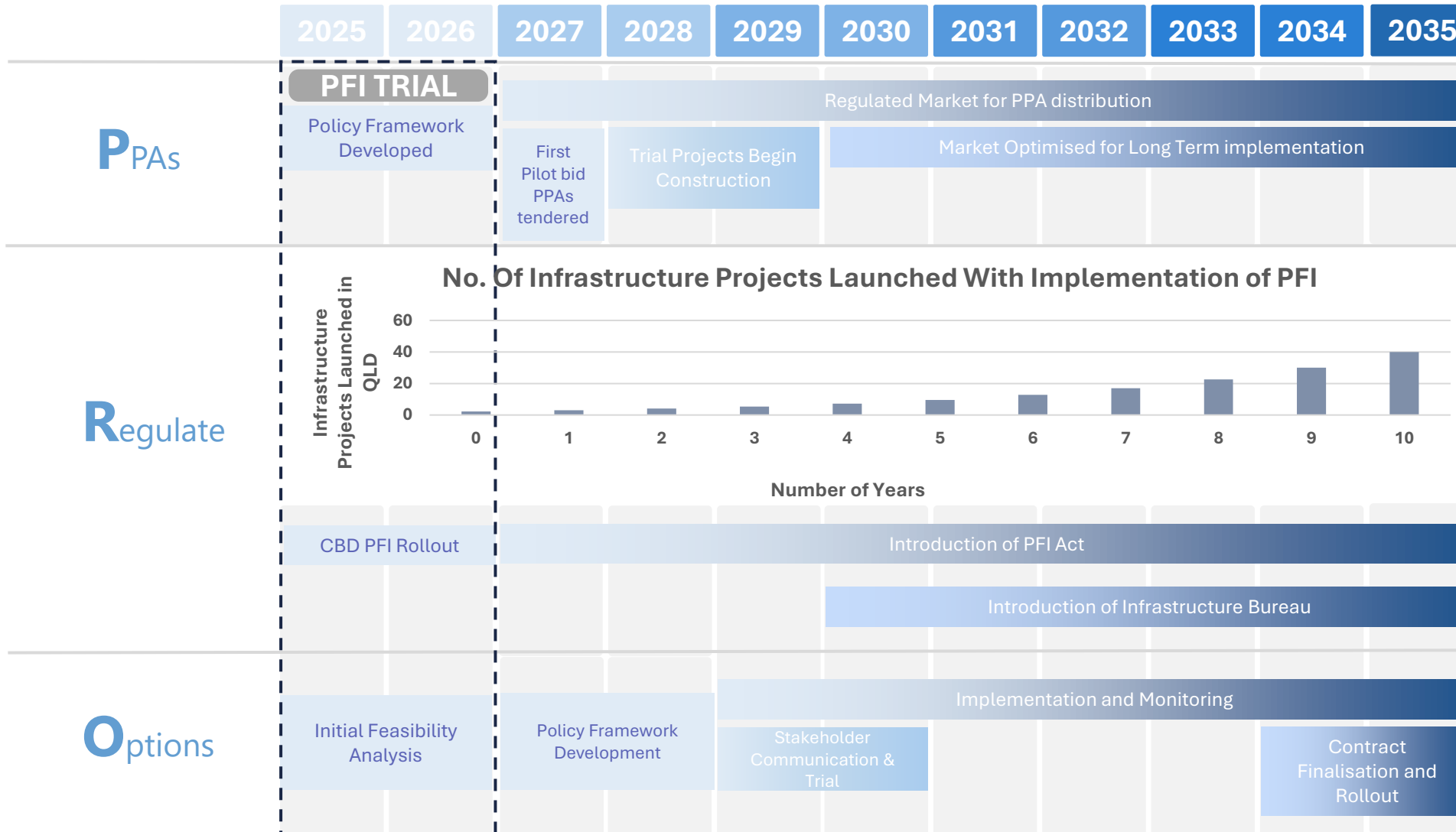
Mutual exit rights, preventing² one-sided walkaways and fostering genuine partnership



Public disclosure of risks eliminates inefficiency of opaque contracts and excessive risk transfers

Sources: Centre for Independent Studies (cis.org) (1) UNSW Law Journal (2) HUNTON (3)

Implementation Timeline

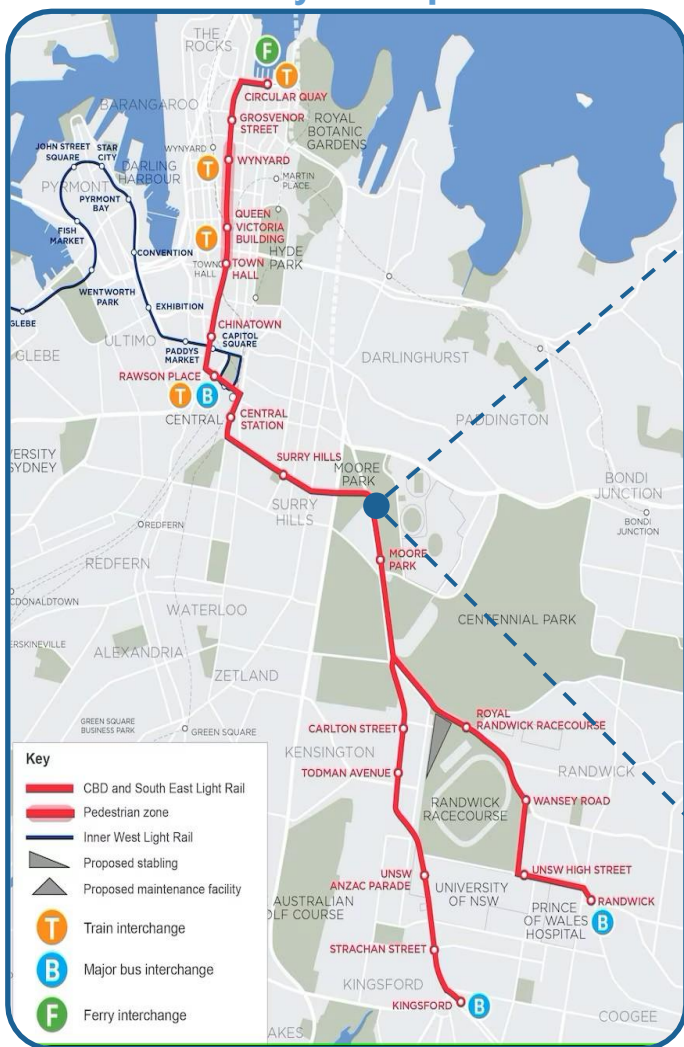


Rollout Plan

- 1 Introduce PFI Act to Brisbane CBD Council Infrastructure projects, successively rollout Infrastructure Bureau
- 2 Develop policy guidelines to regulate private bidding for PPA, implement bidding process for new projects, optimise guidelines for long term market use
- 3 Assess PCOA feasibility for PPPs, develop framework with stakeholder input, begin trial projects with monitoring to refine and finalise approaches

Project Case Study- Sydney Light Rail

Project Map¹



Project Overview

Ambitious Urban Transport Expansion

Aimed to enhance Sydney's public transport by introducing a modern light rail system connecting key districts.

Integrated Network Design

Planned to reduce congestion and improve connectivity between the Central Business District (CBD) and southeastern suburbs.

Public-Private Partnership (PPP) Model

Executed through a PPP involving design, construction, financing, operation, and maintenance until 2036¹

Governance and Execution Failures



Significant Cost Overruns

Project costs escalated from an initial estimate to \$3.1 billion, nearly doubling original projections²



Construction Delays and Legal Disputes

Delays led to extended timelines and legal conflicts with contractors, impacting project delivery¹



Community and Business Disruptions

Extended construction periods adversely affected local businesses, leading to disputes over compensation and community dissatisfaction.

Recommendations in Action

1

Purchase Power Agreements

PPAs enforce **cost discipline**, **allocate risks** clearly, and link payments to on-time project delivery.

2

PFI Act and Infrastructure Bureau

PFI Act would have ensured a thorough plan, both financial and operational, was developed well before implementation, Infrastructure Bureau would have streamlined organisation.

3

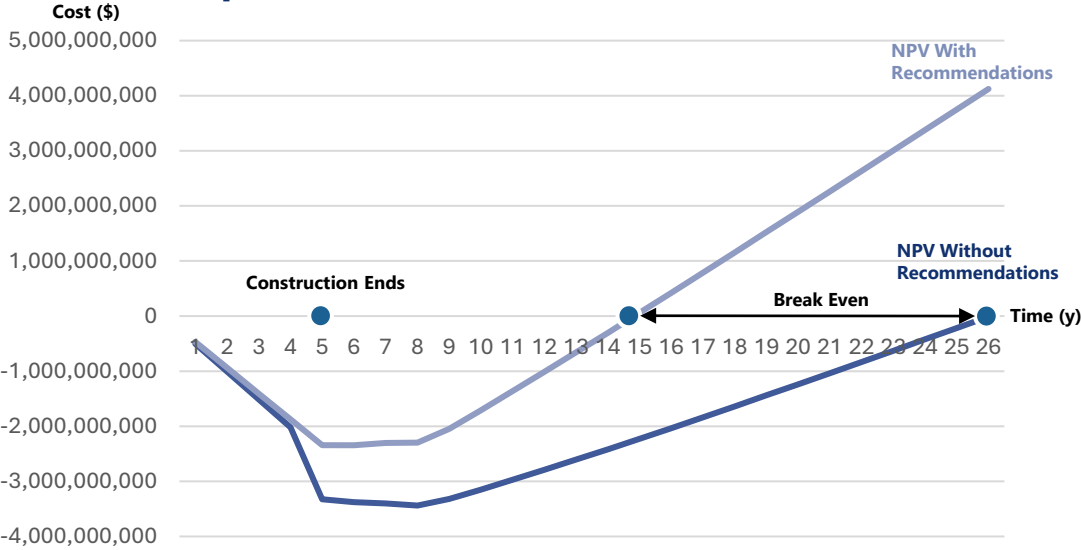
Put and Call Option Agreement

Using PCOAs to enhance risk management could have reduced sunk costs and delays by balancing risks and ensuring transparency, avoiding bitter legal dispute between parties.

Sources: ABC News (1), NSW Transport (2)

NPV Analysis

NPV Comparison



Assumptions

6.15%
Assumed discount
rate

6.67%
Assumed
depreciation²

Sources: Audit Office of NSW (1), ATO Depreciation Rates (2)

Key Statistics

Expected NPV

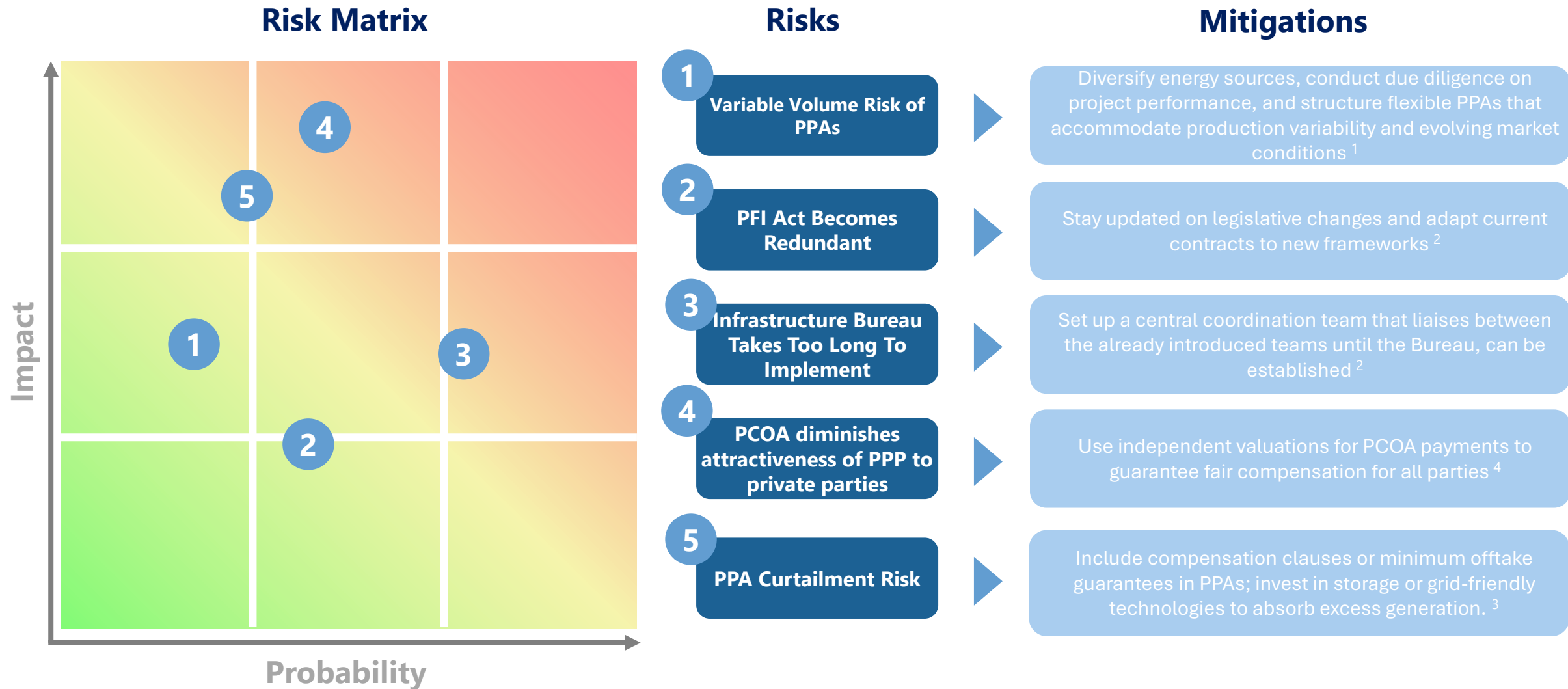
- By implementing the PRO plan, the Sydney Light Rail project could have achieved a **positive NPV 12 years earlier**

Project Mismanagement Costs

- Approved Budget of **\$2.104M** (2015)¹
- \$576M** Compensation Payout after being sued by subcontractor for misinforming them about key parts of the project¹
- \$226.84M** in Additional Expenses due to mismanagement blowing out the project cost to **\$3.1B**¹

Recommendations in Action

- 15% Increase** in Net Operating Cash Flows, shortening the timeline to achieving a positive NPV through a PPA agreement
- 25.5% decrease** in Capital Expenditure by eliminating unnecessary costs and completing appropriate diligence processes
- Elimination of **\$802M mismanagement costs** by distributing risk evenly between key players in the contract



Sources: Montel Energy (1) King and Wood Mallesons(2), Neufin (3), UNSW Law Journal (4)

Environmental

PPAs accelerate renewable energy adoption by securing long-term funding for clean infrastructure projects.

Supports emissions reduction targets through consistent, traceable sourcing of low-carbon electricity.

Promotes sustainable development with transparent, ESG-aligned investment in climate-resilient infrastructure.

30%

Increase in global PPA corporate commitments for renewable projects since 2022¹

55 GW

Of global green energy have been directly funded through PPA negotiations¹

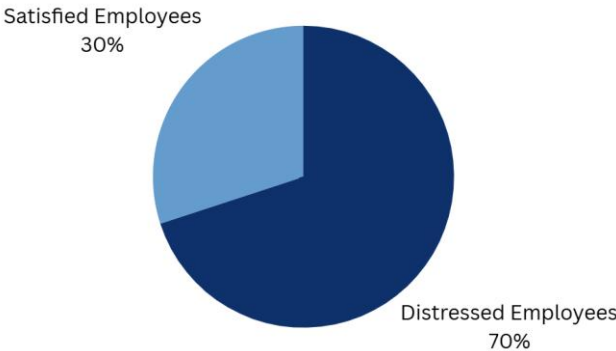
Social

Instillation of PFI Act Extends Social Opportunities to First Nations Groups

Within the Indigenous Councils Critical Infrastructure Program, the PFI Act can reduce time taken on planning projects, and funnel this extra time into consideration for indigenous communities²

Streamlining Brisbane Council Groups

The PFI Act and Infrastructure Bureau will increase successful projects, boosting social morale amongst employees tied to these projects³



Governance

PFI enhances governance by:

- centralising oversight
- enforcing transparent procurement stage
- aligning with national planning objectives

PCOA addresses this through:

- regular valuation process which ensures transparency in risk allocation
- incentivising parties who are best equipped to manage them

74%

of large projects failed due to deficiencies during planning stage⁵

#1

misallocation of risk is the top obstacle to successful PPP's⁴

Sources: Ren 21 (1), Queensland Government (2), Vorecal (3), Bashar, T.; Fung, I.W.H.; Jaillon, L.C.; Wang, D. (4), Independent Project Analysis INC (5)

ESG Provides Benefits In All Areas

- incentivising parties who are best equipped to manage them

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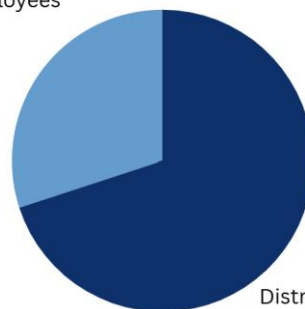
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Streamlining Brisbane Council Groups

The PFI Act and Infrastructure Bureau will increase successful projects, boosting social morale amongst employees tied to these projects³

Satisfied Employees
30%



Distressed Employees
70%

Governance

PFI enhances governance by:

- centralising oversight
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Procurement

Develop policy, assess market, run bids, evaluate proposals, and structure PPAs to secure investment certainty.

Regulate

Introduce a PFI Act and Infrastructure Bureau to regulate the Australian infrastructure sector to improve project completion.

Options

Introduce PCOA, to address PPP issues and maximise mutual benefit for both parties.



APPENDIX: FINANCIALS

Baseline NPV

Baseline NPV Calculations	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2,041
Time (Years)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Revenues	0	0	0	0	0	77,760,000	91,800,000	80,460,000	175,500,000	219,240,000	230,202,000	241,712,100	253,797,705	266,487,590	279,811,970	293,802,568	308,492,697	323,917,331	340,113,198	357,118,858	374,974,801	393,723,541	413,409,718	434,080,204	455,784,214	478,573,425	502,502,096
Less Operating Costs	0	0	0	0	0	-34,560,000	-40,800,000	-35,760,000	-78,000,000	-97,440,000	-102,312,000	-107,427,600	-112,798,980	-118,438,929	-124,360,875	-130,578,919	-137,107,865	-143,963,258	-151,161,421	-158,719,492	-166,655,467	-174,988,240	-183,737,652	-192,924,535	-202,570,761	-212,699,930	-223,334,264
EBITDA	0	0	0	0	0	43,200,000	51,000,000	44,700,000	97,500,000	121,800,000	127,890,000	134,284,500	140,998,725	148,048,661	155,451,094	163,223,649	171,384,831	179,954,073	188,951,777	198,399,366	208,319,334	218,735,301	229,672,066	241,155,669	253,213,452	265,874,125	279,167,831
Less Depreciation	0	0	0	0	0	-75,720,000	-75,720,000	-75,720,000	-75,720,000	-75,720,000	-75,720,000	-75,720,000	-75,720,000	-75,720,000	-75,720,000	-75,720,000	-75,720,000	-75,720,000	-75,720,000	-75,720,000	-75,720,000	-75,720,000	-75,720,000	-75,720,000	-75,720,000	-75,720,000	-75,720,000
EBIT	0	0	0	0	0	-32,520,000	-24,720,000	-31,020,000	21,780,000	46,080,000	52,170,000	58,564,500	65,278,725	72,328,661	79,731,094	87,503,649	95,664,831	104,234,073	113,231,777	122,679,366	132,599,334	143,015,301	153,952,066	165,435,669	177,493,452	190,154,125	203,447,831
Less Corporate Tax	0	0	0	0	0	0	0	0	-6,534,000	-13,824,000	-15,651,000	-17,569,350	-19,583,618	-21,698,598	-23,919,328	-26,251,095	-28,699,449	-31,270,222	-33,969,533	-36,803,810	-39,779,800	-42,904,590	-46,185,620	-49,630,701	-53,248,036	-57,046,237	-61,034,349
Unlevered Net Income	0	0	0	0	0	-32,520,000	-24,720,000	-31,020,000	15,246,000	32,256,000	36,519,000	40,995,150	45,695,108	50,630,063	55,811,766	61,252,554	66,965,382	72,963,851	79,262,244	85,875,556	92,819,534	100,110,710	107,766,446	115,804,968	124,245,417	133,107,887	142,413,482
Add Back Depreciation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Less Capital Expenditure	-504,800,000	-504,800,000	-504,800,000	-504,800,000	-1,307,640,000																						
Free Cash Flow	-504,800,000	-504,800,000	-504,800,000	-504,800,000	-1,307,640,000	-54,360,000	-23,160,000	-48,360,000	149,772,000	232,392,000	253,098,000	274,839,300	297,667,665	321,637,448	346,805,721	373,232,407	400,980,427	430,115,848	460,708,041	492,829,843	526,557,735	561,972,022	599,157,023	638,201,274	679,197,738	722,244,025	767,442,626
NPV	196,320,182		Years:	27																							

NPV with PRO strategy

Implementation NPV Calculations	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Time (Years)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Revenues	0	0	0	0	0	89,424,000	105,570,000	92,529,000	201,825,000	252,126,000	264,732,300	277,968,915	291,867,361	306,460,729	321,783,765	337,872,953	354,766,601	372,504,931	391,130,178	410,686,687	431,221,021	452,782,072	475,421,176	499,192,234	524,151,846	550,359,438
Less Operating Costs	0	0	0	0	0	-34,560,000	-40,800,000	-35,760,000	-78,000,000	-97,440,000	-102,312,000	-107,427,600	-112,798,980	-118,438,929	-124,360,875	-130,578,919	-137,107,865	-143,963,258	-151,161,421	-158,719,492	-166,655,467	-174,988,240	-183,737,652	-192,924,535	-202,570,762	-212,699,300
EBITDA	0	0	0	0	0	54,864,000	64,770,000	56,769,000	123,825,000	154,686,000	162,420,300	170,541,315	179,068,381	188,021,800	197,422,890	207,294,034	217,658,736	228,541,673	239,968,756	251,967,194	264,565,554	277,793,832	291,683,523	306,267,699	321,581,084	337,660,139
Less Depreciation	0	0	0	0	0	-70,320,000	-70,320,000	-70,320,000	-70,320,000	-70,320,000	-70,320,000	-70,320,000	-70,320,000	-70,320,000	-70,320,000	-70,320,000	-70,320,000	-70,320,000	-70,320,000	-70,320,000	-70,320,000	-70,320,000	-70,320,000	-70,320,000	-70,320,000	-70,320,000
EBIT	0	0	0	0	0	-15,456,000	-5,550,000	-13,551,000	53,505,000	84,366,000	92,100,300	100,221,315	108,748,381	117,701,800	127,102,890	136,974,034	147,338,736	158,221,673	169,648,756	181,647,194	194,245,554	207,473,832	221,363,523	235,947,699	251,261,084	267,340,139
Less Corporate Tax	0	0	0	0	0	-4,636,800	-1,665,000	-4,065,300	16,051,500	25,309,800	27,630,090	30,066,395	32,624,514	35,310,540	38,130,867	41,092,210	44,201,621	47,466,502	50,894,627	54,494,158	58,273,666	62,242,149	66,409,057	70,784,310	75,378,325	80,202,042
Unlevered Net Income	0	0	0	0	0	-20,092,800	-7,215,000	-17,616,300	69,556,500	109,675,800	119,730,390	130,287,710	141,372,895	153,012,340	165,233,757	178,066,245	191,540,357	205,688,175	220,543,383	236,141,353	252,519,220	269,715,981	287,772,580	306,732,009	326,639,410	347,542,180
Add Back Depreciation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Less Capital Expenditure	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000
Free Cash Flow	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000	-468,800,000
NPV	206,844,670		Years	15																						

Key Beta Values

Sector	Company (ASX Ticker)	Description	Beta	Unlevered Asset Beta
Arts, Culture, Recreation & Tourism	Event Hospitality & Entertainment (EVT)	Operates cinemas, hotels, and leisure facilities	1.11	0.570899553
	Ardent Leisure (ALG)	Owns theme parks and entertainment assets (e.g., Dreamworld)	1.36	0.971428571
	The Start Entertainment Group (SGR)	Casinos and integrated resorts	1.22	0.895741557
Cross-Government (General Infrastructure Development)	Lendlease (LLC)	Major infrastructure developer (public-private projects)	1.06	0.540843921
	G8 Education (GEM)	Private childcare and early education provider	1.04	0.575221239
Education & Training	IDP Education Limited (IEL)	Higher education services	1.49	0.82320442
	APA Group (APA)	Natural gas pipelines and energy transmission	0.27	0.043831169
	Origin Energy (ORQ)	Energy production and electricity retail	1.15	0.815602837
Energy	AGL Energy (AGL)	Power generation and renewable energy	0.34	0.221642764
	Ramsay Health Care (RHC)	Private hospital network	0.61	0.198373964
	Healix (HLS)	Medical centers, diagnostics, and pathology	0.86	0.446521288
Health	Southern Cross Electrical Engineering Limited (SXE)	Provides outsourced government services, including prisons	0.55	0.520340587
	Transurban (TCL)	Toll roads and highways	0.63	0.254751314
	Aurizon (AZI)	Rail freight infrastructure	0.55	0.302530253
Justice & Public Safety	Qube Holdings (QUB)	Ports, logistics, and intermodal transport	0.87	0.515708358
	Clean TeQ Water (CNQ)	Water purification and recycling technologies	0.59	0.352670813
	Duxton Water (ASX: D20)	Water infrastructure services	0.03	0.01610306
Transport				
Water				

Key D/E Ratios

Company (ASX Ticker)	Debt to Equity Ratio	Tax Rate
Event Hospitality & Entertainment (EVT)	1.349	30%
Ardent Leisure (ALG)	0.4	
The Start Entertainment Group (SGR)	0.362	
Lendlease (LLC)	0.9599	
G8 Education (GEM)	0.808	
IDP Education Limited	0.81	
APA Group (APA)	5.16	
Origin Energy (ORQ)	0.41	
AGL Energy (AGL)	0.534	
Ramsay Health Care (RHC)	2.075	
Healix (HLS)	0.926	
Southern Cross Electrical Engineering Limited (SXE)	0.057	
Transurban (TCL)	1.473	
Aurizon (AZI)	0.818	
Qube Holdings (QUB)	0.687	
Clean TeQ Water (CNQ)	0.672	
Duxton Water (ASX: D20)	0.863	

Beta and Discount Rate by Sector

Sector	Beta	Discount Rate
Arts, Culture, Recreation & Tourism	0.813	0.088761394
Cross-Government (General Infrastructure Development)	0.541	0.072450635
Education & Training	0.699	0.08195277
Energy	0.360	0.061621535
Health	0.322	0.059346858
Justice & Public Safety	0.520	0.071220435
Transport	0.358	0.061459799
Water	0.184	0.051069216

Cumulative NPV Graph Inputs

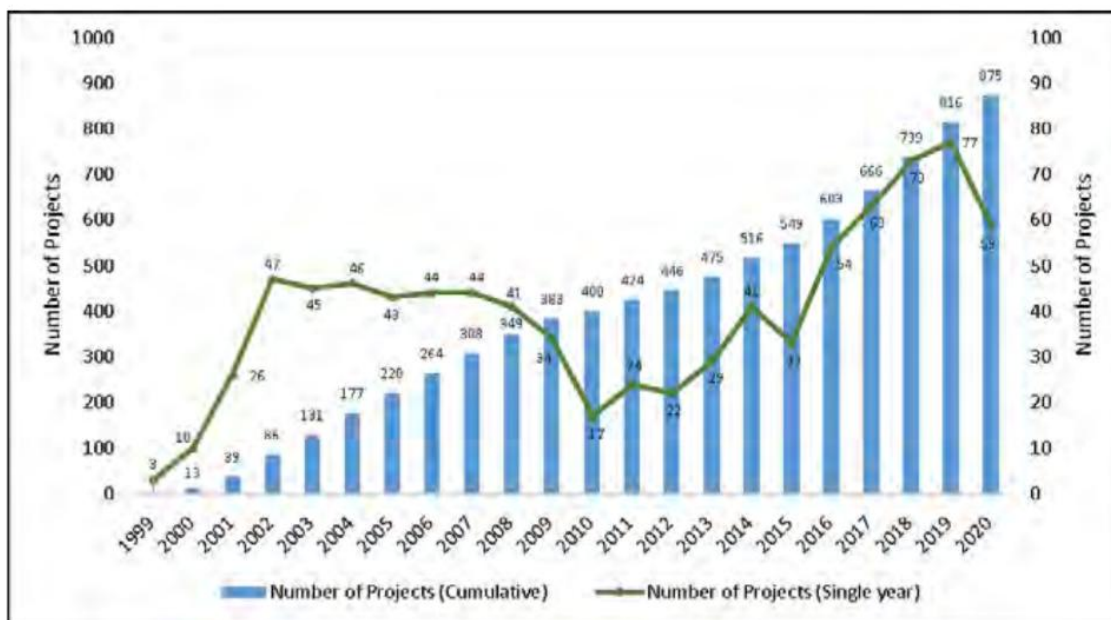
NPV Model Inputs

Sydney Light Rail Extrapolated Revenue Data and Operating Costs

Cumulative NPV Baseline	Cumulative NPV PRO	Time	Approved budget (2015)		FY	Ridership	Revenue	YoY Growth	Operating Costs
-504,800,000	-468,800,000	0	Deed of settlement	2,104,000,000	2019-2020	14,400,000	77,760,000		34,560,000
-1,009,600,000	-937,600,000	1	Advance payment	576,000,000	2020-2021	17,000,000	91,800,000	18.06%	40,800,000
-1,514,400,000	-1,406,400,000	2	Additional direct project management a	87,000,000	2021-2022	14,900,000	80,460,000	-12.35%	35,760,000
-2,019,200,000	-1,875,200,000	3	Additional costs relating to the Sydney	73,000,000	2022-2023	32,500,000	175,500,000	118.12%	78,000,000
-3,326,840,000	-2,344,000,000	4	Project contingency provision	72,000,000	2023-2024	40,600,000	219,240,000	24.92%	97,440,000
-3,378,050,551	-2,344,732,548	5	Additional costs not included	81,000,000	2024-2025	42,630,000	230,202,000	5.00%	102,312,000
-3,398,604,656	-2,304,982,188	6	Total cost	153,840,000	2025-2026	44,761,500	241,712,100	5.00%	107,427,600
-3,439,036,755	-2,298,305,875	7		3,146,840,000	2026-2027	46,999,575	253,797,705	5.00%	112,798,980
-3,321,072,444	-2,049,067,163	8	Capital Expenditure		2027-2028	49,349,554	266,487,590	5.00%	118,438,929
-3,148,639,128	-1,708,934,744	9	Yearly construction cost	2,524,000,000	2028-2029	51,817,031	279,811,970	5.00%	124,360,875
-2,971,722,472	-1,363,639,507	10	Yearly # of riders	504,800,000	2030-2031	54,407,883	293,802,568	5.00%	130,578,919
-2,790,739,030	-1,013,749,993	11	Ticket Price		2032-2033	57,128,277	308,492,697	5.00%	137,107,865
-2,606,079,522	-659,798,886	12	Yearly Revenue	40,590,000	2034-2035	59,984,691	323,917,331	5.00%	143,963,258
-2,418,110,353	-302,285,119	13		\$ 5.40	2036-2037	62,983,926	340,113,198	5.00%	151,161,421
-2,227,175,036	58,324,135	14	Depreciation	\$ 219,186,000	2038-2039	66,133,122	357,118,858	5.00%	158,719,492
-2,033,595,537	421,591,597	15	Discount Rate	6.67%	2040-2041	69,439,778	374,974,801	5.00%	166,655,467
-1,837,673,543	787,108,116	16		6.15%	2041-2042	72,911,767	393,723,541	5.00%	174,988,240
-1,639,691,653	1,154,491,009	17			2042-2043	76,557,355	413,409,718	5.00%	183,737,652
-1,439,914,503	1,523,382,501	18			2043-2044	80,385,223	434,080,204	5.00%	192,924,535
-1,238,589,822	1,893,448,248	19			2044-2045	84,404,484	455,784,214	5.00%	202,570,762
-1,035,949,428	2,264,375,952	20			2045-2046	88,624,708	478,573,425	5.00%	212,699,300
-832,210,170	2,635,874,058	21			2046-2047	93,055,944	502,502,096	5.00%	223,334,265
-627,574,809	3,007,670,515	22							
-422,232,853	3,379,511,629	23							
-216,361,338	3,751,160,961	24							
-10,125,570	4,122,398,306	25							

APPENDIX: PFI Implementation in Japan

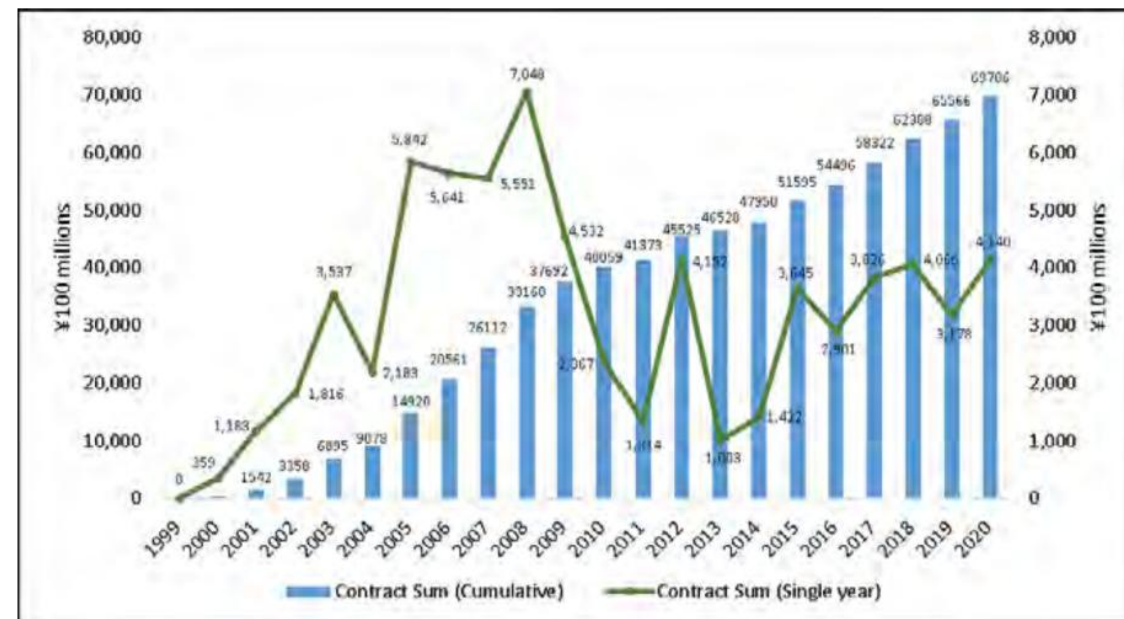
Number of PFI Projects 875



(Note)

The number of projects indicated is the number of projects implemented under the PFI Act as identified by the Cabinet Office survey through the publication of the implementation policy and does not include projects which were canceled or discontinued during the service provision period or projects that were abandoned after the announcement of the implementation policy.

Contract Value of PFI Projects USD 61billion (JPY 7 trillion)



(Note)

The contract value is the total of the initial contract amount for projects in which the implementation policy was made public and for which public expenditure was determined for the relevant fiscal year, as ascertained by the Cabinet Office survey. The contract amount does not include the compensation for operating right under the “the right to operate public facilities system,” which is a different indicator from the project scale in the “Action Plan for PPP/PFI Promotion.”

Sources: King and Wood Mallesons

The Council for the Promotion of PFI

The Council for the Promotion of PFI is a special body established within the Cabinet Office under the PFI Act to deliberate on important matters related to PFI, including the drafting of basic policies for PFI projects implementation, mutual coordination among related administrative agencies, deliberation on other essential issues associated with PFI measures.

Chairman: Prime Minister

Members: Ministers of State other than the Chairman, designated by the Prime Minister (all Ministers of State)

The Council for the Promotion of PPP/PFI
(PFI Act Article 83)

The Committee for the Promotion of PPP/PFI
(PFI Act Article 85)

Planning
Sub-committee

Project Promotion
Sub-committee

The Committee for the Promotion of PFI

The Committee for the Promotion of PFI is a committee consist of academia and people with practical experiences established to collect information from the expert perspective that will contribute to the sound promotion of PFI projects, and conducting the necessary research and deliberation and overall coordination with the government on the implementation status and opinions from private sectors.

Planning Sub-committee:

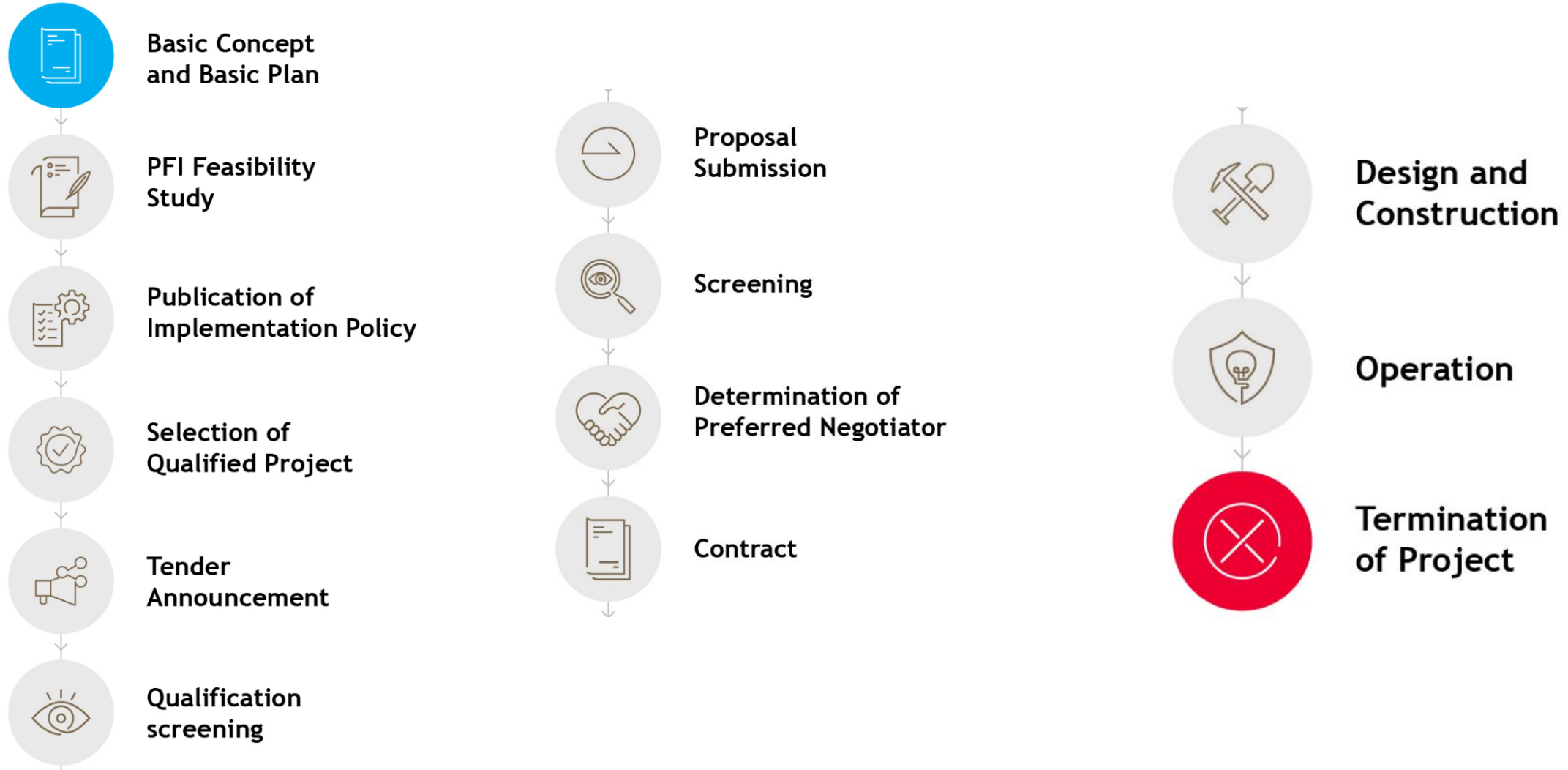
The Planning Sub-committee monitors the progress of the “Action Plan,” etc., and investigates and deliberates on necessary revisions to ensure the reliable implementation of the plan.

Project Promotion Sub-committee:

Project Promotion Sub-committee investigates and deliberates on measures and systems necessary for promoting PFI, etc.

Sources: King and Wood Mallesons

APPENDIX: PFI Implementation Timeline



Sources: King and Wood Mallesons

Australia is facing a historic investment challenge, with an estimated \$1.2 to \$1.5 trillion in newly invested capital required by 2030 in order to meet 2050 decarbonisation targets. In response policy makers have begun “re-entering” energy markets, which were deregulated and privatised in the 1990’s. Public auctions for State-backed ‘Contracts-for-Differences’ (CfDs) now act as a key policy tool to “prime” energy markets for new variable renewable energy (VRE) capacity. In a phenomenon recently coined “market hybridisation”, market participants form long-term investment decisions that are increasingly disconnected from short-run spot pricing dynamics and day-to-day operations. Historically, it has been common practice to underpin VRE projects with some form of power purchase agreement (PPA). However, increasing investor appetites for “semi-merchant” projects (i.e. projects partially exposed to spot prices) has become an emerging trend. This article examines the semi-merchant phenomenon, aiming to explain why the investment model is becoming popular for investors in VRE. Of particular interest are the foregone advantages attributable to highly contracted plant when securing bankable project finance. Results reveal that a revenue mix comprising 70%–80% PPA coverage and 20%–30% merchant exposure appears viable and tractable for investors in utility scale solar – whilst maintaining a typical project finance capital structure of c.60%–70% gearing. By implication, policymakers targeting 4000MW of new solar capacity via CfD auction may need only offer ~3000MW of contracted capacity, thereby reducing taxpayer exposures and protecting scarce government balance sheet resources.

HOW MATERIAL IS MERCHANT RISK?

Entering into a long-term fixed-price PPA means committing an offtake price in the face of uncertain future market prices. The generally accepted measure of uncertainty is volatility.

It measures the typical width of annual price fluctuation in percentage terms. For most European power markets, volatility is in the 15-30% range, meaning potential value fluctuations on the same order of magnitude. Clearly, a prudent investment approach will require some of this risk to be mitigated – how can this be done?

Sources: Science Direct Report, Pexapark