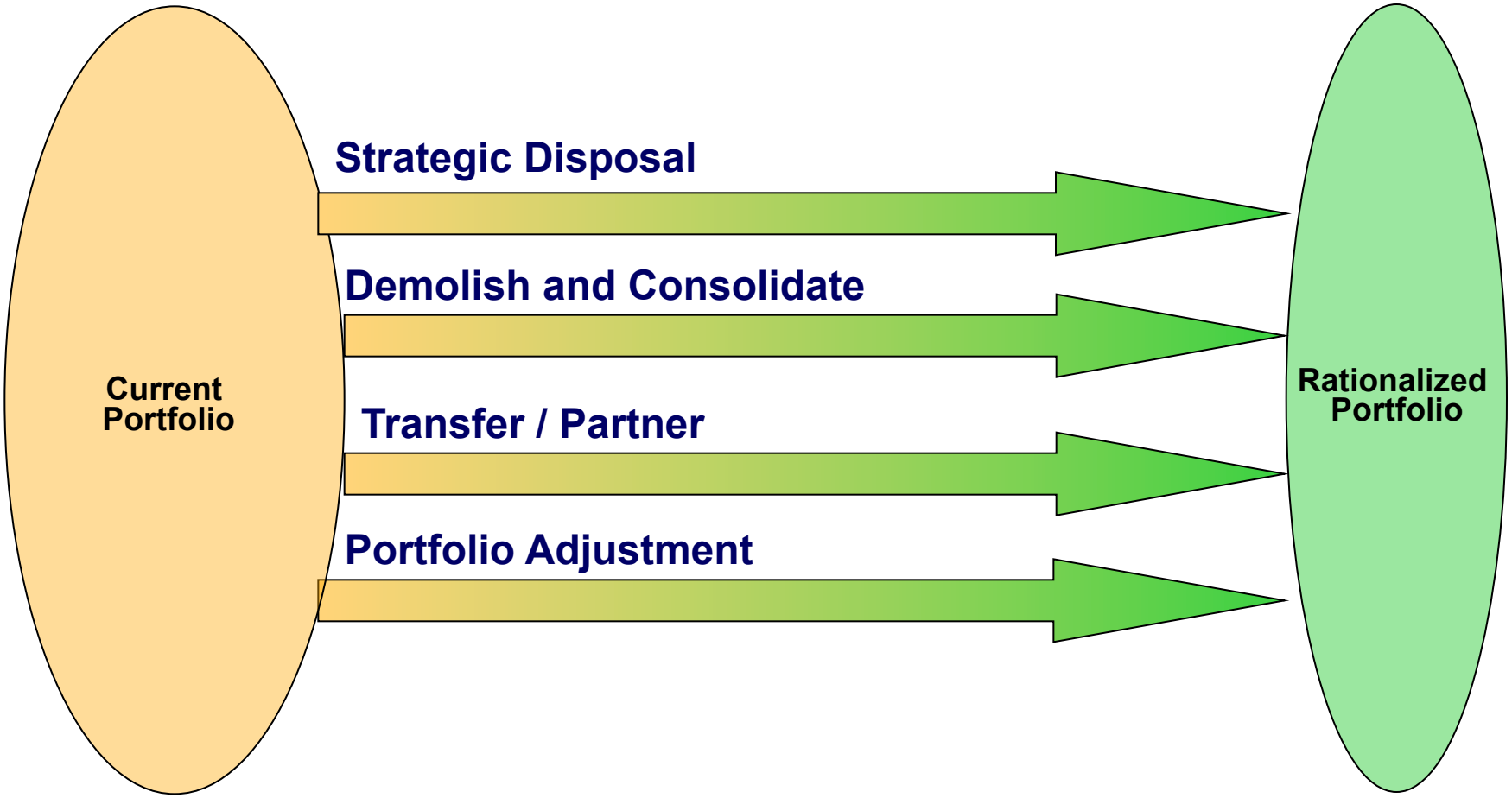
Portfolio Decision Tools

Achieve Efficiencies to Meet Defence Renewal Objectives



Process

1. Identify asset classes with opportunities for efficiencies (characterize portfolio)

2. Rank these asset classes by applying metrics of common criteria for suitability for rapid change and impact to vote 1 expenditures

3. Select two to three asset classes for further analysis

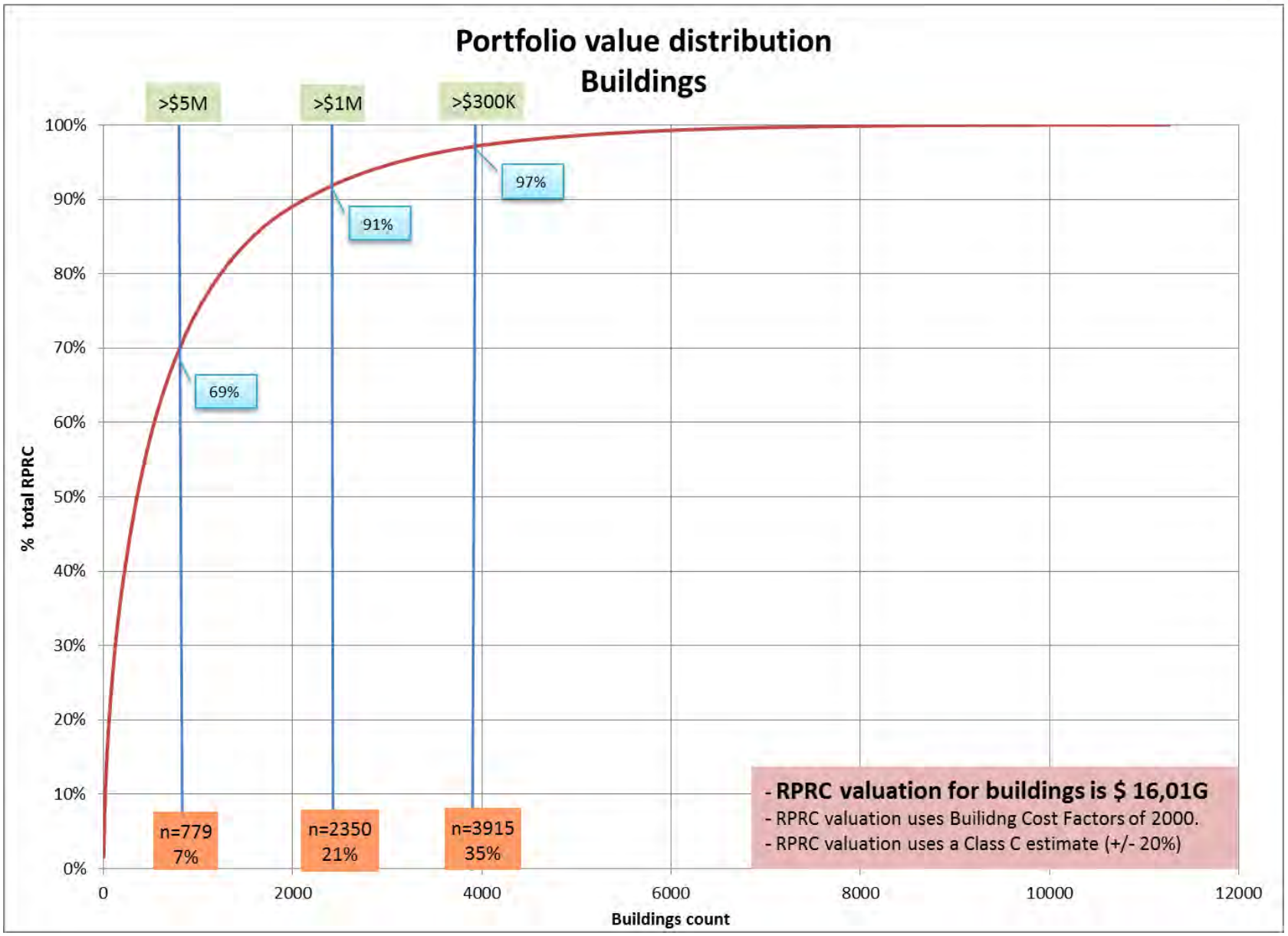
Prioritization Metrics

- Operational Relevance
- Vote 1 expenditure
- Feasibility and timing of change
- RPRC (Replacement Cost Value)

Result

FY 14/15 Asset Analysis Plan

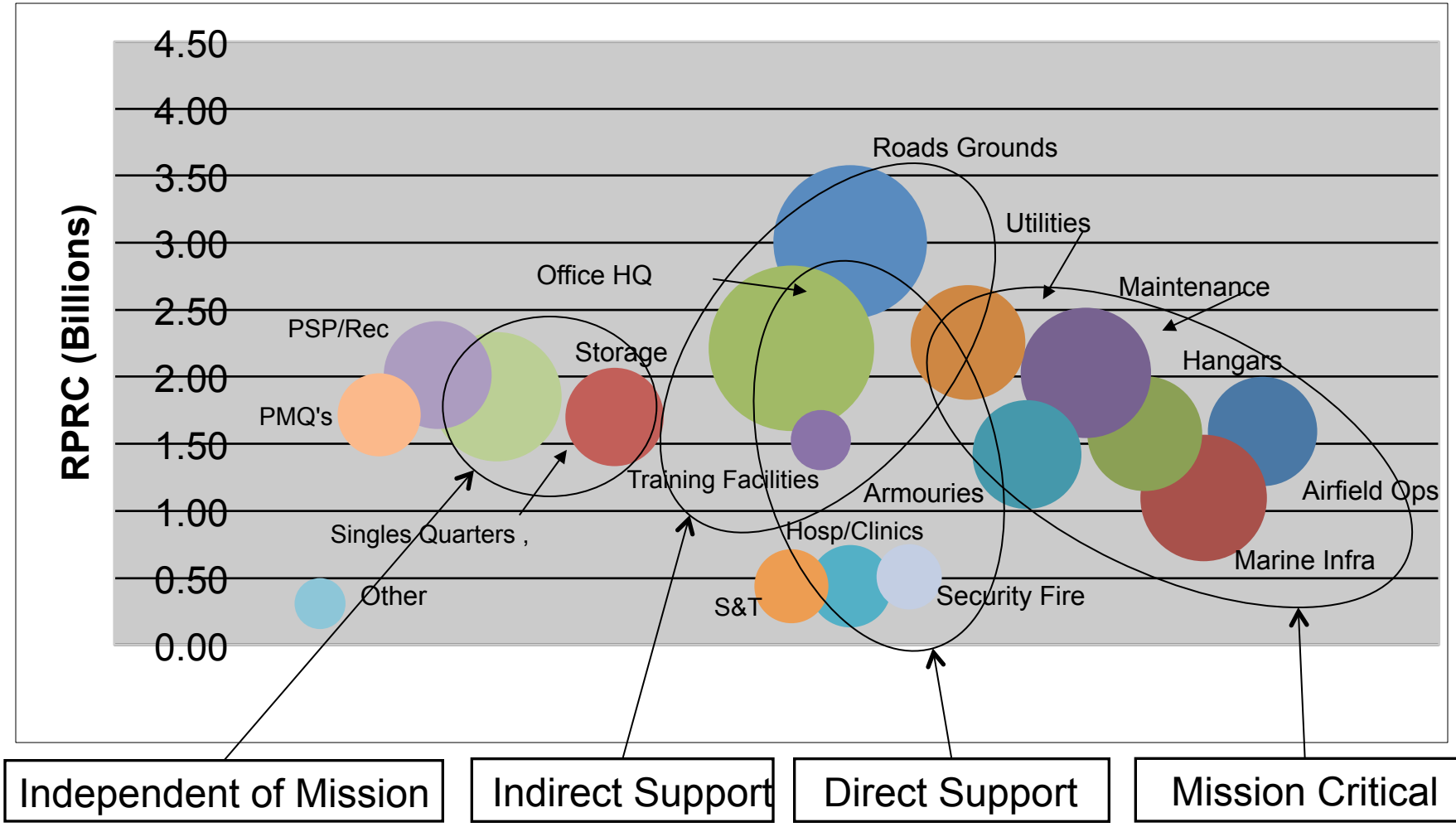
- Utilities (Central Heating Plants)
- Single Quarters
- Storage Facilities


Portfolio value distribution
Buildings
>$5M
>$1M
>$300K
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
% total RPRC
97%
91%
69%
n=779
7%
n=2350
21%
n=3915
35%
0
2000
4000
6000
8000
10000
12000
Buildings count
- RPRC valuation for buildings is $ 16,01G
- RPRC valuation uses Buildng Cost Factors of 2000.
- RPRC valuation uses a Class C estimate (+/- 20%)

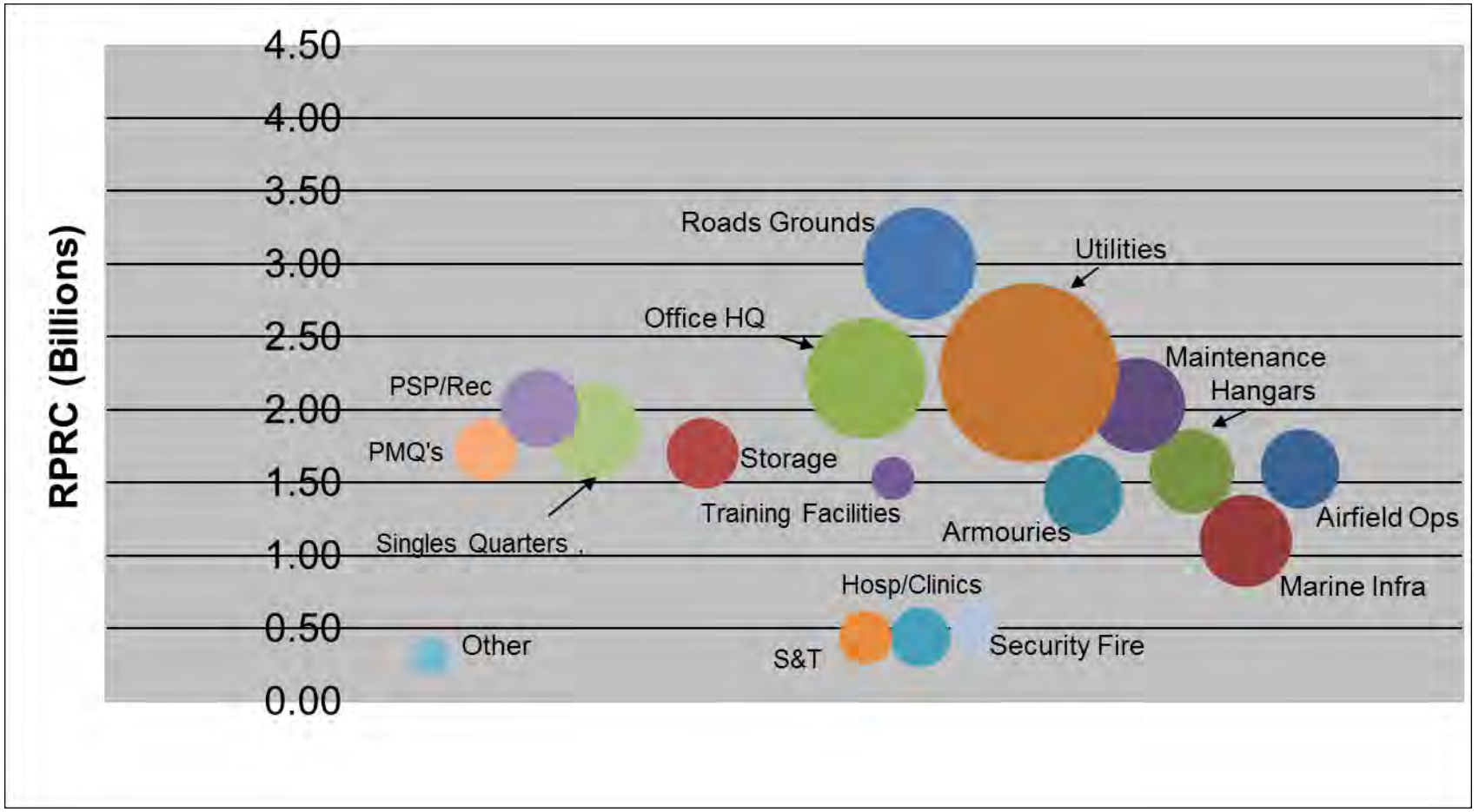
Asset Class Assessment Matrix
(for discussion only)

Criteria	Total Possible Score	Office Admin Bldgs	Barracks	Dining Messes	Roads Grds	PMQs RHUs	Armouries
Less Relevance to Mission	**30**	15	20	10	15	20	7
Percent RPRC	**20**	18	15	3	15	12	8
Fewer policy constraints	**5**	4	4	3	5	2	4
Poorer condition	**5**	3	3	3	2	2	3
Lower suitability	**5**	4	4	3	2	2	3
Interimittent Occupancy/Use	**10**	1	5	3	2	0	5
High DND cost to own	**25**	15	18	10	15	4	20
Total Score	**100**	**60**	**69**	**35**	**56**	**42**	**50**
Assets with highest scores best candidates for exploring alternate means of delivering RP support							

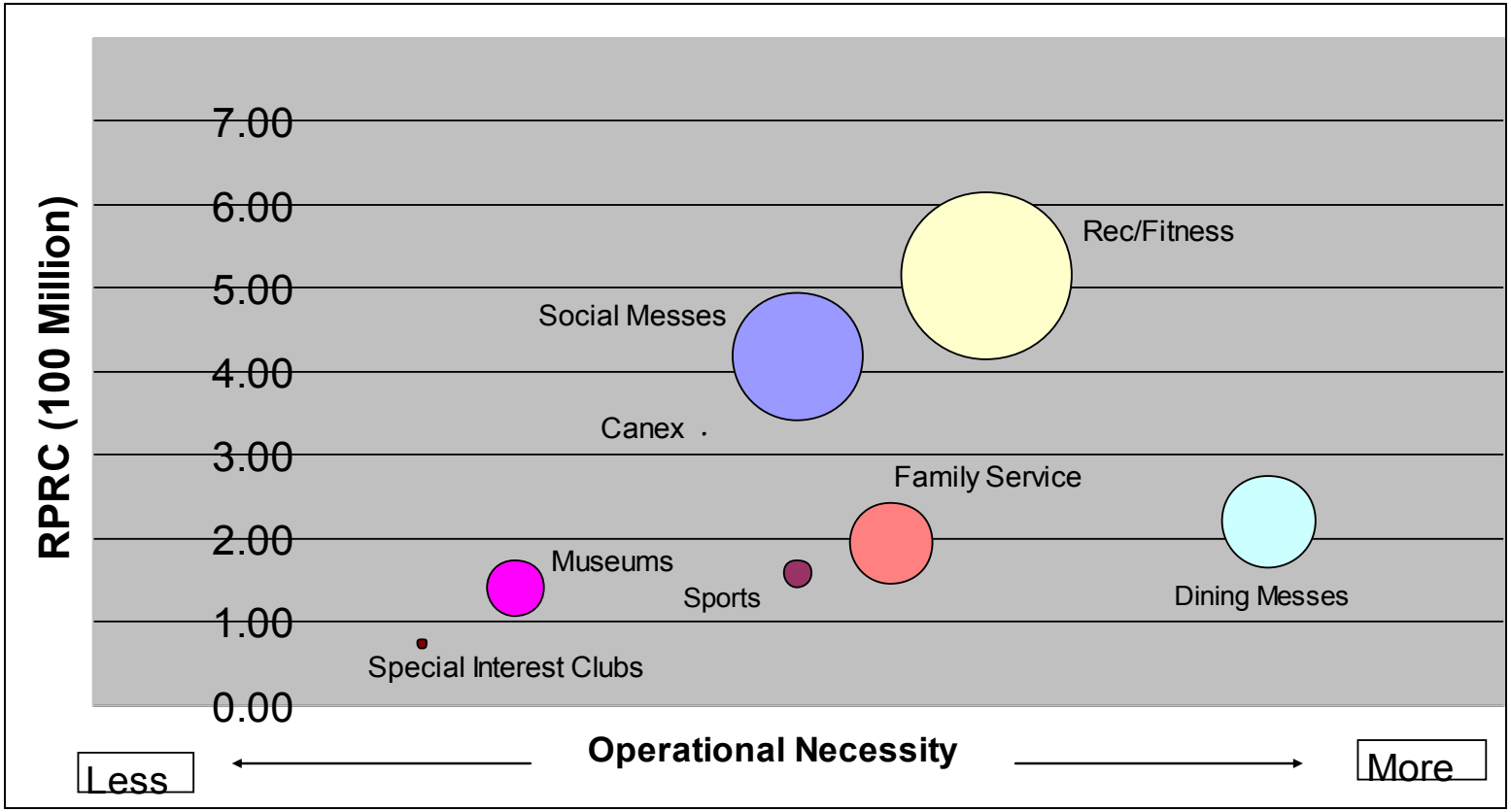
All Portfolio Assets – Mission relevance



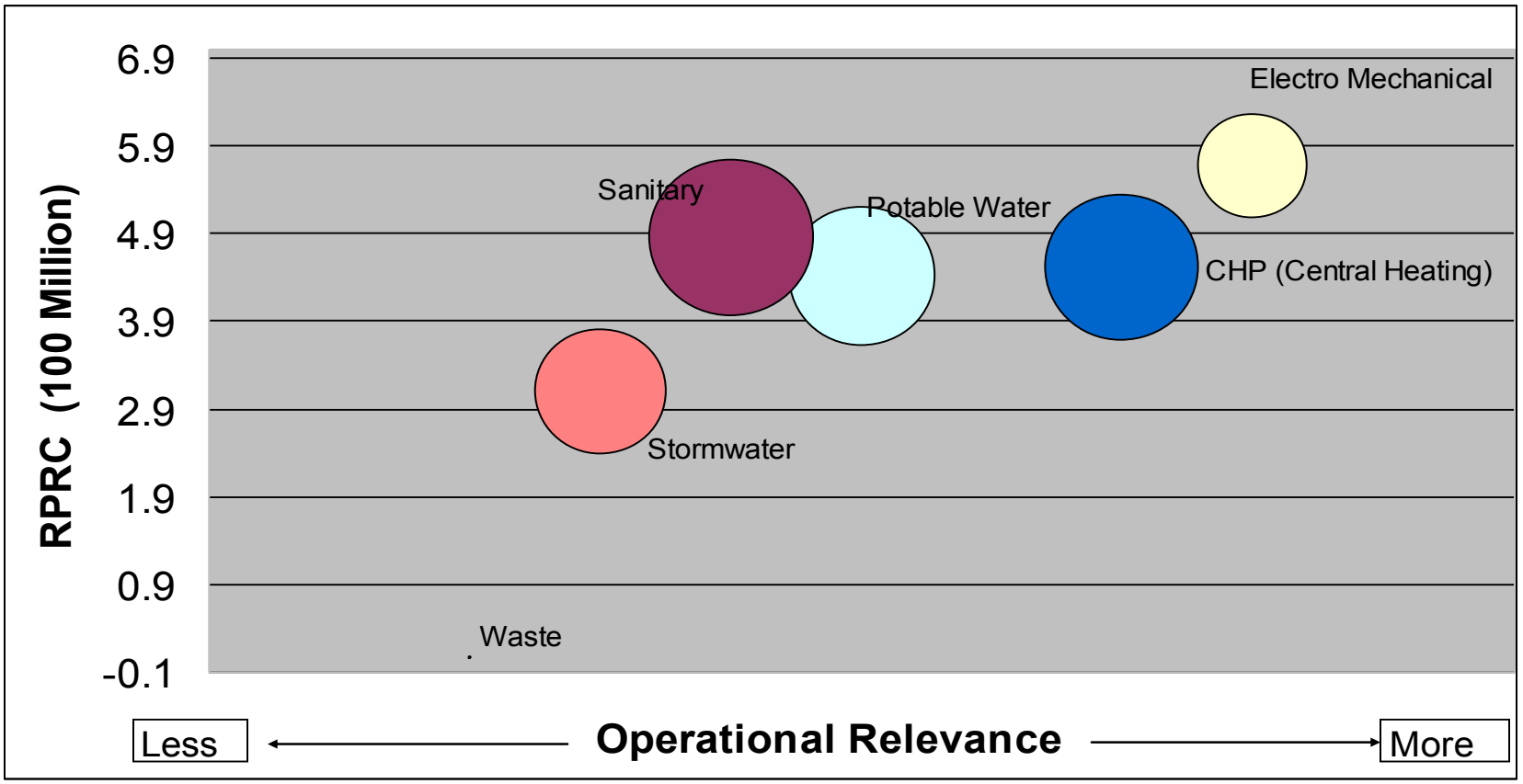
Portfolio Assets (Energy Costs)



PSP Assets

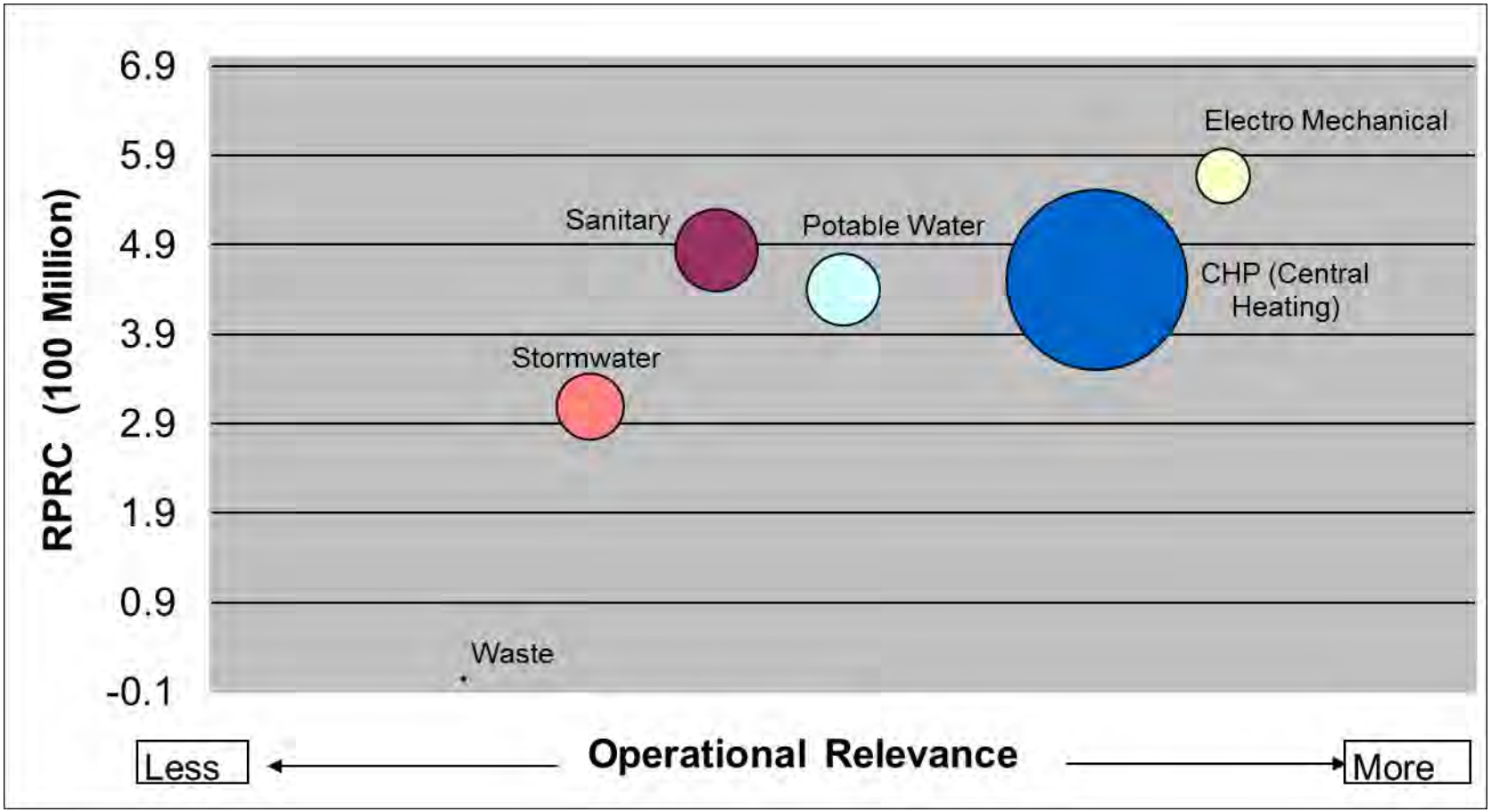

RPRC (100 Million)
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
Rec/Fitness
Social Messes
Canex
Family Service
Museums
Sports
Dining Messes
Special Interest Clubs
Less
Operational Necessity
More

Utility Assets



Note does not reflect cost of utilities = 35 to 55 %
of total operations costs for all assets that consume energy

Utility Assets (incl. energy cost)



Heating Plants
Strategic Analysis

Objectives of Analysis

Mission Relevance

- CHPs are direct mission support assets
- Strong weight in reliability and performance metrics

Defence Renewal 4.2 and 4.3 targets

- Target is total reduction of $89M to $152M in vote 1 operating expenses
- Significant cost to DND to operate plants

Energy Management

– Reduce CHP consumption and cost of energy

GHG Reduction

– Reduce GHG emissions

Partnerships

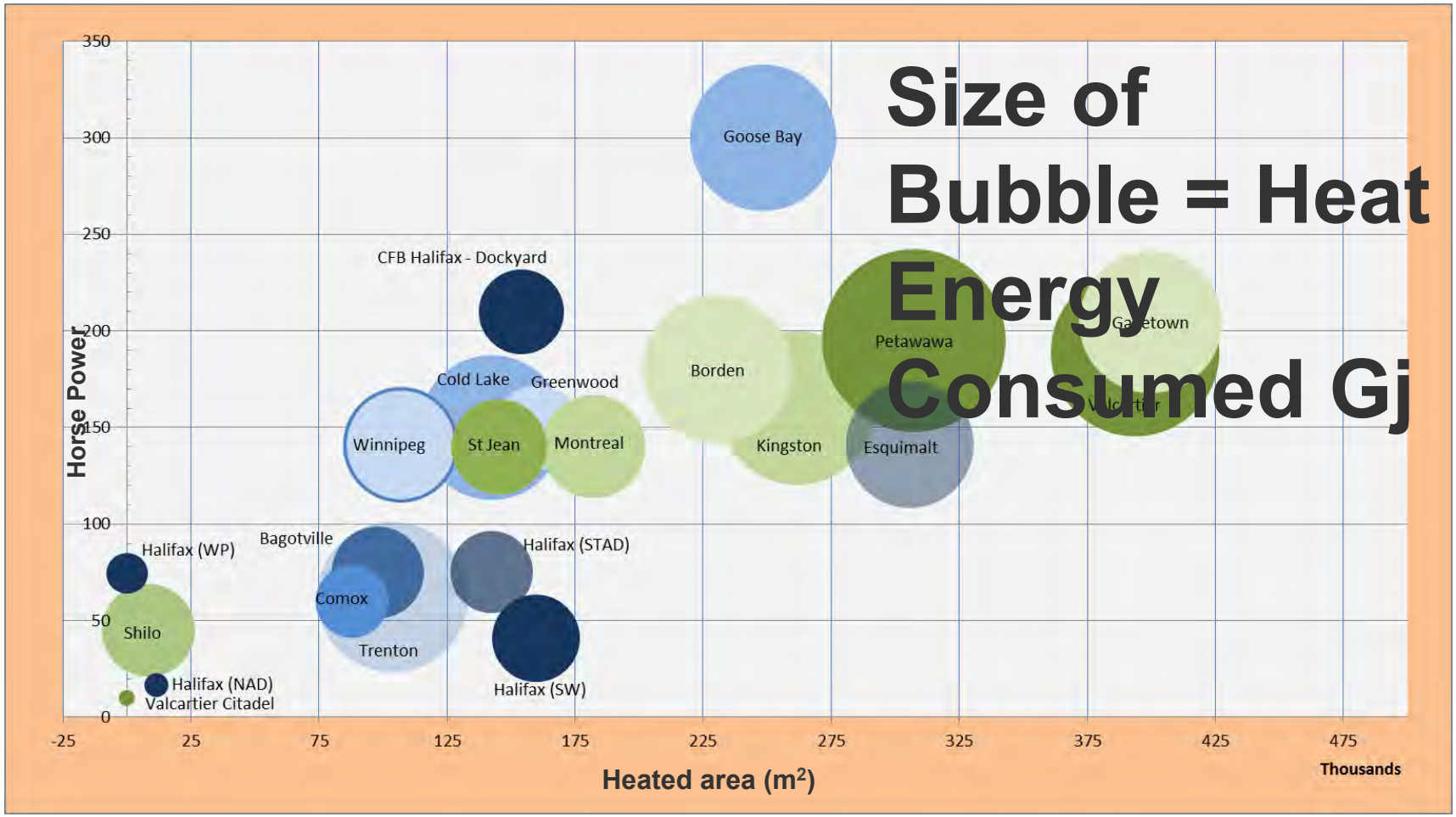
– Assess alternate ways to deliver

DND Heat Supply Decision Drivers

Optimize portfolio Reduce Vote 1 spending and GHGs Resolve HR capacity issues	Defence Renewal FSDS Targets IE Centralisation
Target capital spending on CHPs in right locations (apply metrics analysis)	National Real Property Development Plan
Changes in 25 year RP plan Intensify Land Use Link CHP to current and forecast heat and energy demand planning	Master Property Development Plan (Base Wing)
Most cost effective supply and distribution technology CHP VS Integral HP Steam VS Low Temp Hot Water GHG Reduction Initiatives Energy Conservation Measures TBS Directive for P3 Screening 2011	NPMP How to Supply Heat

Region	Description	# of CHPs	RPRC (CHP)	RPRC (works)	RPRC (total)
Pacific	2 HP Steam	2	21,364,411	5,400,997	26,765,409
Western	3 HP Steam	3	27,587,313	5,570,473	33,157,786
NCR North/ Central	Cogen	1			
Ontario	3 HP Steam **1 Cogen** (Petawawa)	4	49,175,919	9,322,633	98,552
Quebec	4 HP Steam	5	73,300,182	10,589,177	83,889,359
Atlantic	7 HP Steam 1 HP Hot (Water Gagetown)	8	119,234,145	38,806,571	158,040,715
CANADA		**23**	**290,661,970**	**89,689,85**	**380,351,821**

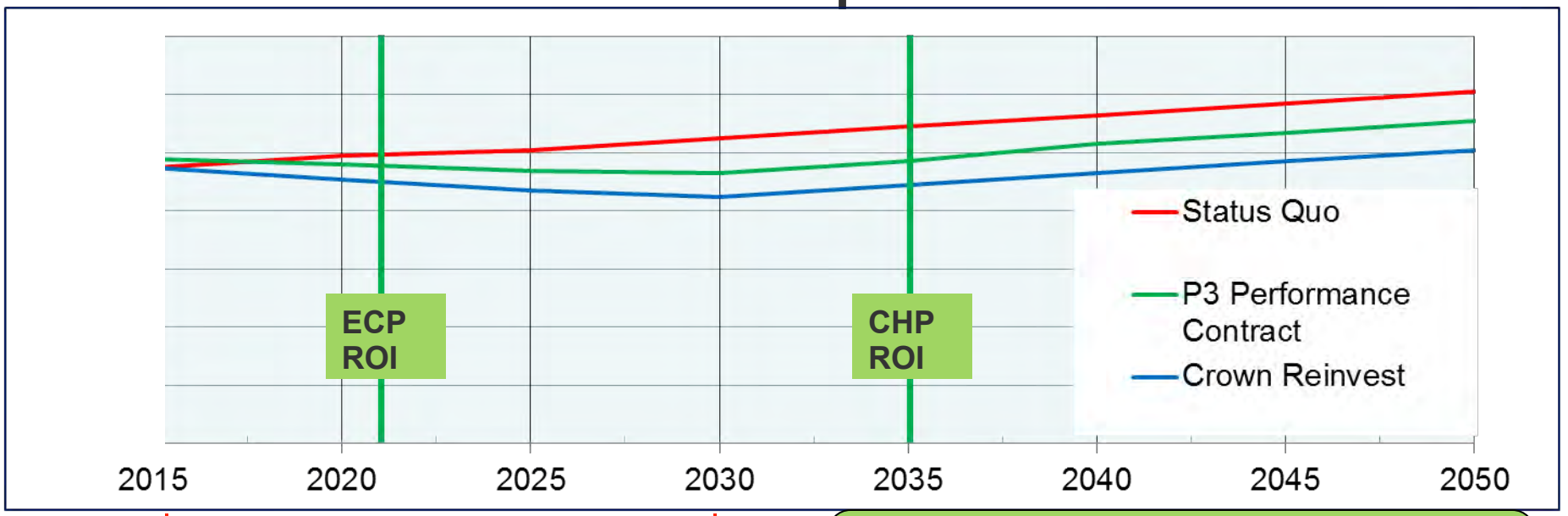
Energy consumption



Service Delivery Options

- P3 Heat purchase
- P3 Design, build, operate and maintain
- AFD Crown design, build – Contractor operate, maintain
- Crown design, build, operate and maintain

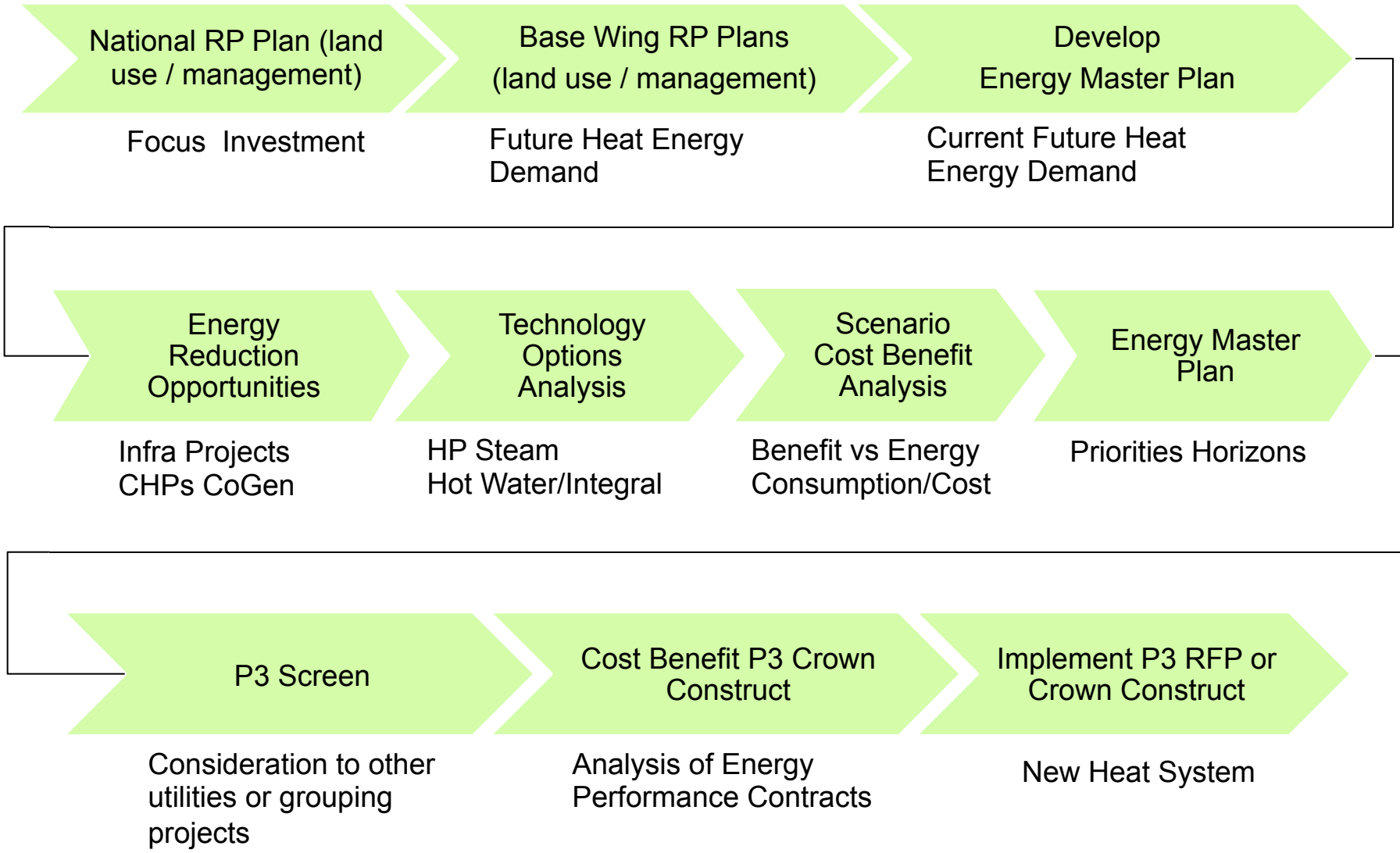
Best case – impacts on O&M



ECP and CHP replacement horizon

CHP and distribution systems are valued at more than $ 500M

Road Map


National RP Plan (land use / management)
Base Wing RP Plans (land use / management)
Develop Energy Master Plan
Focus Investment
Future Heat Energy Demand
Current Future Heat Energy Demand
Energy Reduction Opportunities
Technology Options Analysis
Scenario Cost Benefit Analysis
Energy Master Plan
Infra Projects CHPs CoGen
HP Steam Hot Water/Integral
Benefit vs Energy Consumption/Cost
Priorities Horizons
P3 Screen
Cost Benefit P3 Crown Construct
Implement P3 RFP or Crown Construct
Consideration to other utilities or grouping projects
Analysis of Energy Performance Contracts
New Heat System