CHANGING WHAT'S POSSIBLE

Readout

Breakout on the Role of Government in Fusion Development

August 30, 2017

Introduction

- Path to a fusion power plant will be long and difficult
  - In addition to fusion core development, there are significant timescales and costs for power plant engineering, licensing the build and operation of a novel nuclear facility
- There are a number of different historical models, each with a different level of involvement for government, industry, and investors
- Fusion is a unique challenge, and we will need to be creative in how we proceed
- We would like to use this breakout to identify and prioritize the resources, services, and roles for government throughout the development path

FUSION CORE VIABILITY
Few $100Ms | 5-10 years

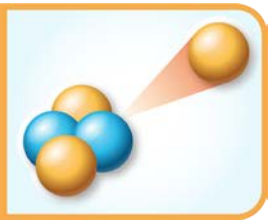
Energy breakeven equivalent

REACTOR SUBSYSTEM DEVELOPMENT
Many $100Ms | 5-10 years

Fuel and neutron handling, operating cycle

PROTOTYPE PLANT DEMONSTRATION
>$1B | 5-10 years

Full system integration and operation;
design certification

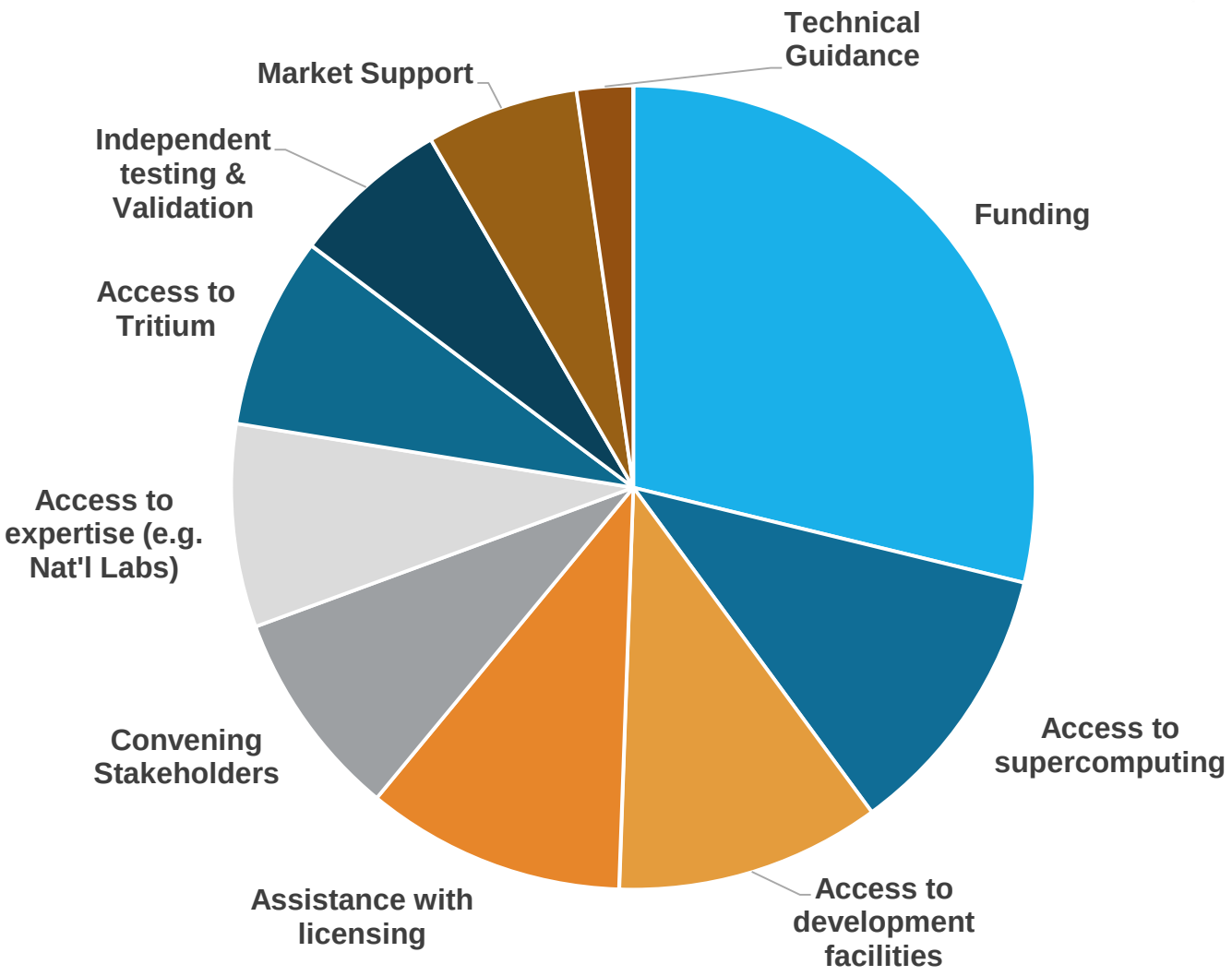


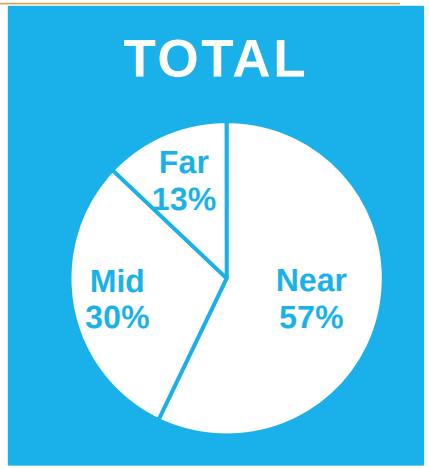
The Role of Government

- Discuss the importance of the following government resources/roles during each of the three phases:
  - Funding
  - Technical guidance
  - Convening stakeholders
  - Independent testing and validation
  - Access to expertise (e.g., National Labs)
  - Access to supercomputing capabilities
  - Access to development facilities
  - Access to tritium
  - Assistance with licensing
  - Market support

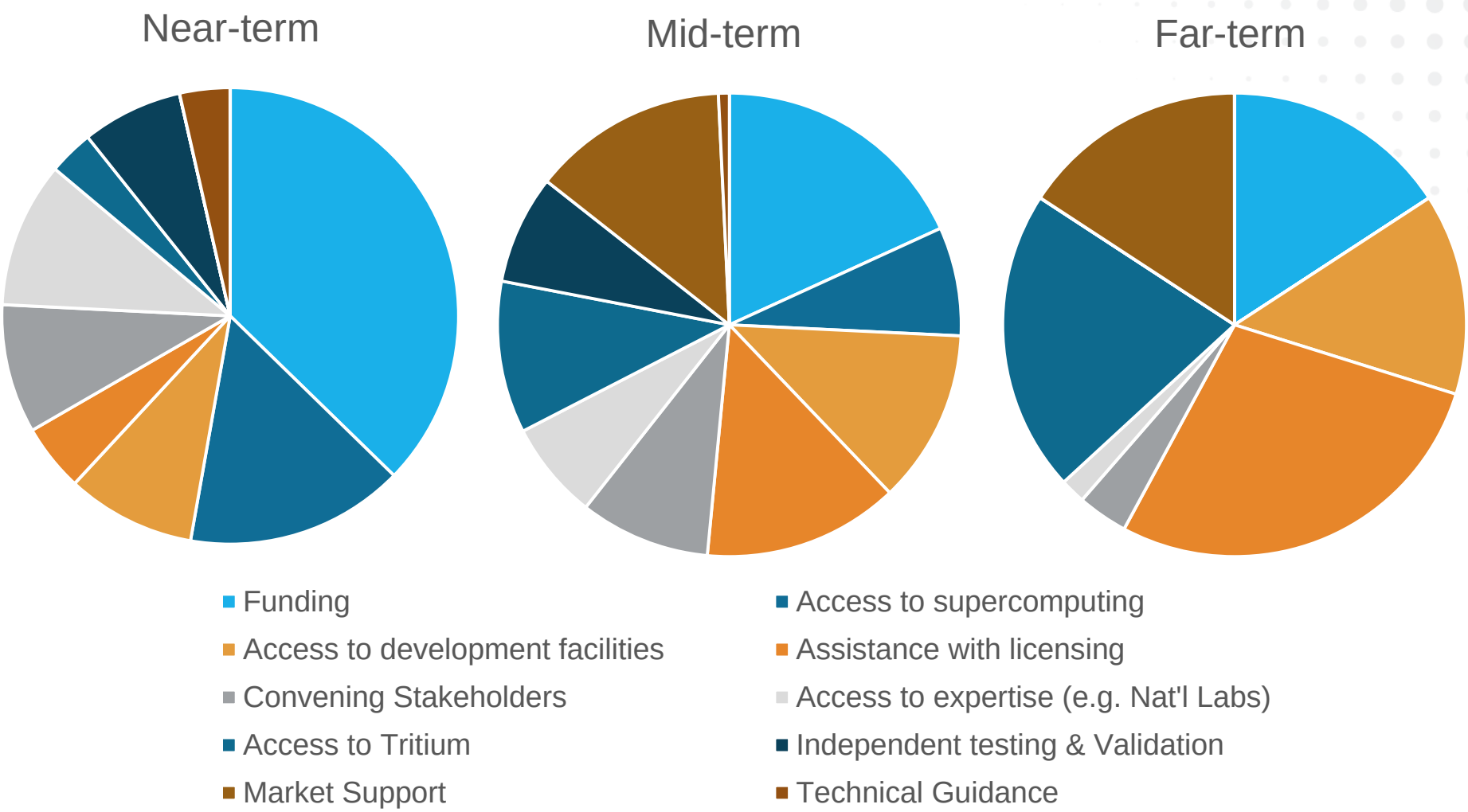
- After discussion concludes, participants will vote on their priorities based on the resource and phase

Resources by area
(Near, mid and far term votes summed)





Resources: Near, Mid, and Far Term



Results for all rooms

All rooms	Near	Mid	Far	TOTAL
Funding	94	24	9	127
Access to supercomputing	39	10	0	49
Access to development facilities	23	16	8	47
Assistance with licensing	12	18	16	46
Convening Stakeholders	23	12	2	37
Access to expertise (e.g. Nat'l Labs)	26	9	1	36
Access to Tritium	8	14	12	34
Independent testing & Validation	18	10	0	28
Market Support	0	18	9	27
Technical Guidance	9	1	0	10
TOTAL	252	132	57	

Results by breakout room

	Pat			Ryan			Colleen		
	Near	Mid	Far	Near	Mid	Far	Near	Mid	Far
Funding	37	10	4	16	5	4	41	9	1
Technical Guidance	2	0	0	3	1	0	4	0	0
Independent testing & Validation	6	3	0	7	6	0	5	1	0
Access to expertise (e.g. Nat'l Labs)	5	3	0	4	5	1	17	1	0
Access to supercomputing	10	2	0	9	0	0	20	8	0
Access to development facilities	2	6	5	8	3	3	13	7	0
Assistance with licensing	0	7	7	5	6	4	7	5	5
Market Support	0	8	8	0	6	0	0	4	1
Convening Stakeholders	12	7	0	6	4	2	5	1	0
Access to Tritium	0	10	7	2	3	5	6	1	0

Rough cut of data presented at workshop

BACKUPS

Peacock

Pat			
	Near	Medium	Far
Funding	37	10	4
Technical Guidance	2	0	0
Independent testing & Validation	6	3	0
Access to expertise (e.g. Nat'l Labs)	5	3	0
Access to supercomputing	10	2	0
Access to development facilities	2	6	5
Assistance with licensing	0	7	7
Market Support	0	8	8
Convening Stakeholders	12	7	0
Access to Tritium	0	10	7

Barclay

Ryan			
	near	med	far
Funding	16	5	4
Convene Stakeholders	6	4	2
Access to Development facilities	8	3	3
Access to Tritium	0	6	0
Independent Testing and Validation	7	6	0
Technical Guidance	3	1	0
Market Support	2	3	5
Assisstance with licensing	5	6	4
Access to expertise	4	5	1
Access to supercomputing capabilities	9	0	0

Willard

Colleen	sum	sum	sum
Funding	41	9	1
Technical guidance	4	1	0
Independent testing and validation	5	2	0
Access to expertise (e.g., National Labs)	17	9	0
Access to supercomputing capabilities	20	15	0
Access to development facilities	13	12	0
Assistance with licensing	7	9	5
Access to Tritium	0	5	1
Convene stakeholders	5	2	0
Market support	6	1	0