

Table of ReNeW Technology Areas and Related Primary Thrusts

This two-page table summarizes technology elements from the ReNeW Thrusts extracted from the issues or actions identified in the Thrust one pagers. The “area” headings (PMI, PFC, ...) and numbers (#) created for this table. While the right column notes a single related Thrust, each element can represent a compilation of related items from several thrusts.*

<i>Area</i>	<i>#</i>	<i>Technology Elements and primary related Thrusts (right)</i>	
PMI	1	Dev/test (PMI) new materials	10
	2	FW conditioning (B field)	4
	3	PMI/edge model dev. & integration in design/testing	9
	4	PMI-based tokamak R&D	9
FAC	see PFC and INT categories		
PFC	1	Design high temp PFCs; integrated design/test effort	11
	2	Improve PFCs & config.	9
	3	Deploy/test new LM PFCs	11
	4	PFCs (for new facility)	12
FAC	1	Support for upgraded lab facilities	10
IC	1	RF actuators for control	2
	2	Improve IC R&D, active ICs	9
	3	ICs (FNST tests)	13
	4	ICs (core-edge facility)	12
FAC	4	new tokamak, technology for new tokamak	4
	5	New Core-edge Facility	
	8	Construct/operate new (D/T) fusion nuclear science facility	13
HEAT	1	Heating systems (RF, other)	4
	2	beams	16
	3	heating (FNST tests)	13
	4	heating (core-edge facility)	12
FAC	4	new tokamak, technology for new tokamak	4
	5	New Core-edge Facility	
	8	Construct/operate new (D/T) fusion nuclear science facility	13
FUEL	1	fueling	16
	2	New fueling techniques	
	3	fueling & pumping (FNST tests)	13
	4	fueling & pumping (core-edge facility)	12
FAC	4	new tokamak, technology for new tokamak	4
	5	New Core-edge Facility	
	8	Construct/operate new (D/T) fusion nuclear science facility	13

* An EXCEL Spreadsheet (Thrusts_TechnologyCrossCut_22jun09.xls) shows the selection and consolidation of Technology Elements beginning with the Tech Summary Worksheet, which shows the table above and the other technology elements subsumed in the items listed in the table. The other worksheets show the steps proceeding back to the Thrust Tracking Worksheet which shows the initial listing of the Thrusts with the related technology elements. The wording of technology elements do not necessarily appear directly in the Thrust one-pagers but were written to represent their perceived intent.

Table of ReNeW Technology Areas and Related Primary Thrusts

Area	#	Technology Elements and primary related Thrusts (right)	
MAG	1	magnets	16
	2	High Temperature Superconductor Development	
	3	technology for new tokamak	4
	4	Magnets (new confinement device); support technology	18
	5	magnets (FNST tests)	13
	6	magnets (core-edge facility)	12
FAC	4	new tokamak, technology for new tokamak	4
	5	New Core-edge Facility	
	6	ST Upgrade, technology	16
	8	Construct/operate new (D/T) fusion nuclear science facility	13
	??	?? HT SC assembly/winding facility??	
DIAG	1	Edge diagnostics (new)	9
	2	Development of appropriate engineering diagnostics	11
INT	1	Develop theories and predictive models for fusion nuclear systems	13
	2	Integrated physics-technology model	
	3	Integrated design studies, facilities	
	4	Integrated testing to confirm reliability in suitable test stand(s)	11
FAC	1	Support for upgraded lab facilities	10
	2	Support lab facilities and experiments in user facilities needed for separate effects and integrated effects testing	14
	3	Large test stands for integrated test and design validation	10
FNST	1	ITER TBM participation	13
FNST	2	Integrated Fusion Nuclear Systems Tests	
FAC	2	Support lab facilities and experiments in user facilities needed for separate effects and integrated effects testing	14
	3	Large test stands for integrated test and design validation	10
	8	Construct/operate new (D/T) fusion nuclear science facility	13
MAT	1	Develop/test new materials; compile data; test under fusion-relevant conditions	14
	2	Develop predictive models for materials performance	14
	3	Perform integrated testing to validate models	14
FAC	7	Build and operate fusion neutron source	14