

Renew

= Research Needs Workshop
June 7-13, 2009

<http://burningplasma.org/Renew.html>

Why?

- **foundation** for fusion program planning during the ITER era—roughly the next two decades.
 - Renew Report to OFES will appear mid-July, 2009.
- **opportunity** for the US fusion community to explain its research goals to a new administration.
 - Chu, Holdren, OMB...

Charter

- Renew is not a FESAC panel: no charge letter (despite two helpfully descriptive letters from Gene Nardella).
- Renew Executive Committee, including OFES members and external OFES participants, constructed a “Charter” to fill gap:
 - “Renew Goals and Strategy”

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Technical resources

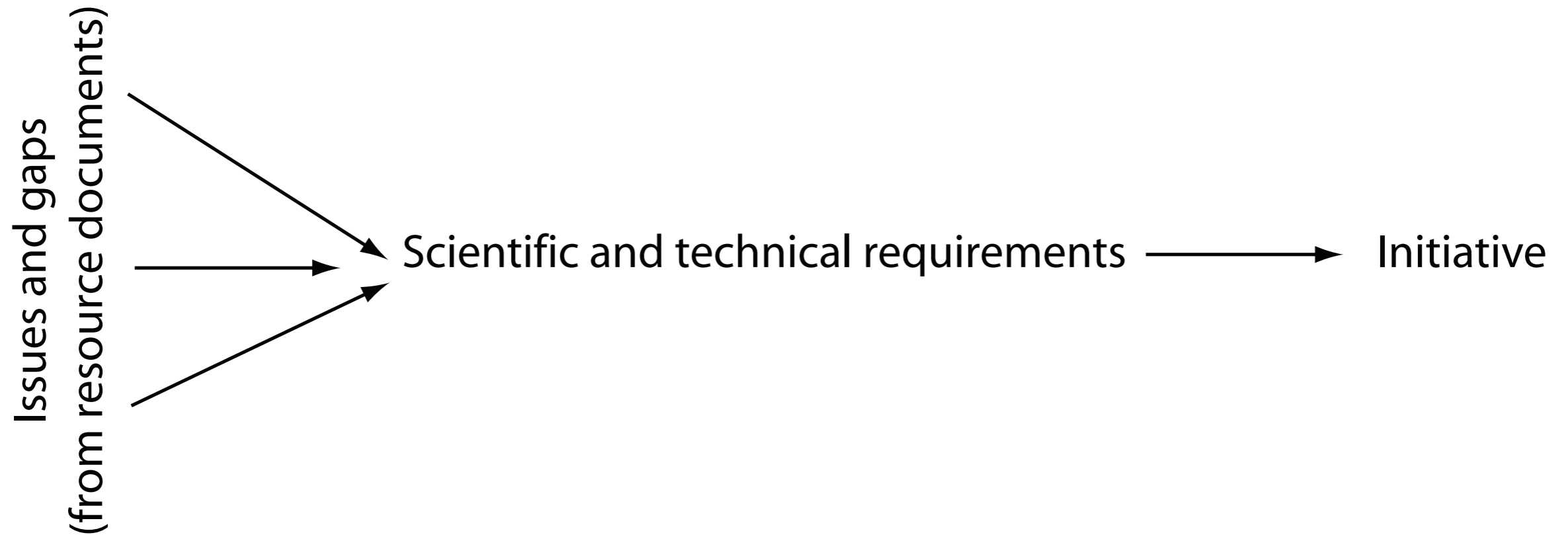
Three essential resource documents:

- Priorities, Gaps and Opportunities Panel, chaired by Martin Greenwald (“Greenwald report”)
- Toroidal Alternates Panel, chaired by David Hill (“TAP report”)
- Energy Policy Act (EPAct) task group of the U.S. Burning Plasma Organization (“EPAct report”)

Product

- Framework of Renew plan: a set of about 15 scientific and technical **initiatives** (“**campaigns?**”).
- Initiative (**campaign**): **an organized, multi-faceted attack** on some question (or coherent set of questions) of magnetic fusion energy science or technology, using a combination of new and existing program elements.
- Intended to be **basis** for detailed program plan, to be constructed by OFES

Work-flow (idealized)



The point: “to ensure that each initiative is convincingly grounded in a compelling need of the the fusion research program.”

Arrangements
Al Opdenaker

Workshop leadership
Richard Hazeltine (C)
David Hill (VC)
Hutch Neilson (OFES)

Burning plasma in ITER
Jim Van Dam (C)
Mickey Wade (VC)
John Mandrekas (OFES)

High-performance steady state
Amanda Hubbard (C)
Chuck Greenfield (VC)
Mark Foster (OFES)

Plasma material interface
Mike Ulrickson (C)
Rajesh Maingi (VC)
Rostom Dagazian (OFES)

Fusion power
Wayne Meier (C)
Rene Raffray(VC)
Barry Sullivan (OFES)

Magnetic configuration
John Sarff (C)
Mike Zarnstorff (VC)
Sam Barish (OFES)

Control

Measurement

Off-normal events

Alpha particles

Reactor conditions

Self-heating

Integration

Modeling

Magnets

Auxiliary systems

Plasma-wall

PFC

Internal

Fuel cycle

Power extraction

Materials

Safety

RAMI

Stellarator

ST

RFP

CT

Schedule

- ✓ Panel organization complete: 12/3/08
- ✓ Theme Workshops scheduled: 12/12/08
- Workshops complete: 4/17/09
- ExCom consolidates campaigns: 5/2/09
- Workshop: 6/7-13
- Report submitted: 7/17/09

Status

- Renew is populated:
 - Theme chairs, vice chairs, OFES champions
 - Panels chaired and populated
- Theme workshops scheduled (March)
- Theme and ExCom teleconferences underway; emphasis on identifying requirements

Theme workshops

- Burning plasma in ITER: 3/23 - 27
- High-performance steady state: 3/23 - 27
- Plasma material interface: 3/4 - 6
- Fusion power: 3/2 - 4
- Magnetic configuration: 3/16 - 19

Topics (to be) discussed

- ✓ Stove-piping
- ✓ Repetition of previous studies
- ✓ Community input
- ✓ Recruitment
- ✓ Foreign participation
- Relation to major facilities' plans (top down vs. bottom up); relation to OFES Strategic plan
- Vocabulary