STFC Town Meetings

Programmatic Review

Science Board Summary

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Programmatic Review: Objectives

- **Assess quality of all STFC's programmes in terms of**
  - **Scientific excellence**
  - **Operational effectiveness**
  - **Impact**
  - **Alignment to STFC's science strategy**

- **Consider how to take forward future opportunities**

- **Recommend a balanced programme of excellent science and impact within a realistic financial envelope**

  - **Indicative scenarios: flat cash and ±10%**

    (apart from Large Facilities)

Decision-making Criteria

Excellence

- Scientific/technical importance
- International relevance
- Timeliness
- Strategic importance to stakeholders
- Risks
- Scale of the investment

Impact (economic and social)

- New business, products etc.
- Industrial engagement
- Influence on public policy
- Skilled people
- Outreach/inspiration
- Publicity/media exposure

Decision-making Criteria

Leadership

- UK leadership and track record
- Prospects for UK-led research outputs
- Influence over long-term development of the field

Synergies

- Alignment with STFC Science and Corporate strategies
- Coherence with other programmes
- Match to international subscriptions
- Relevance to Campus strategies

Programmatic Review: Process

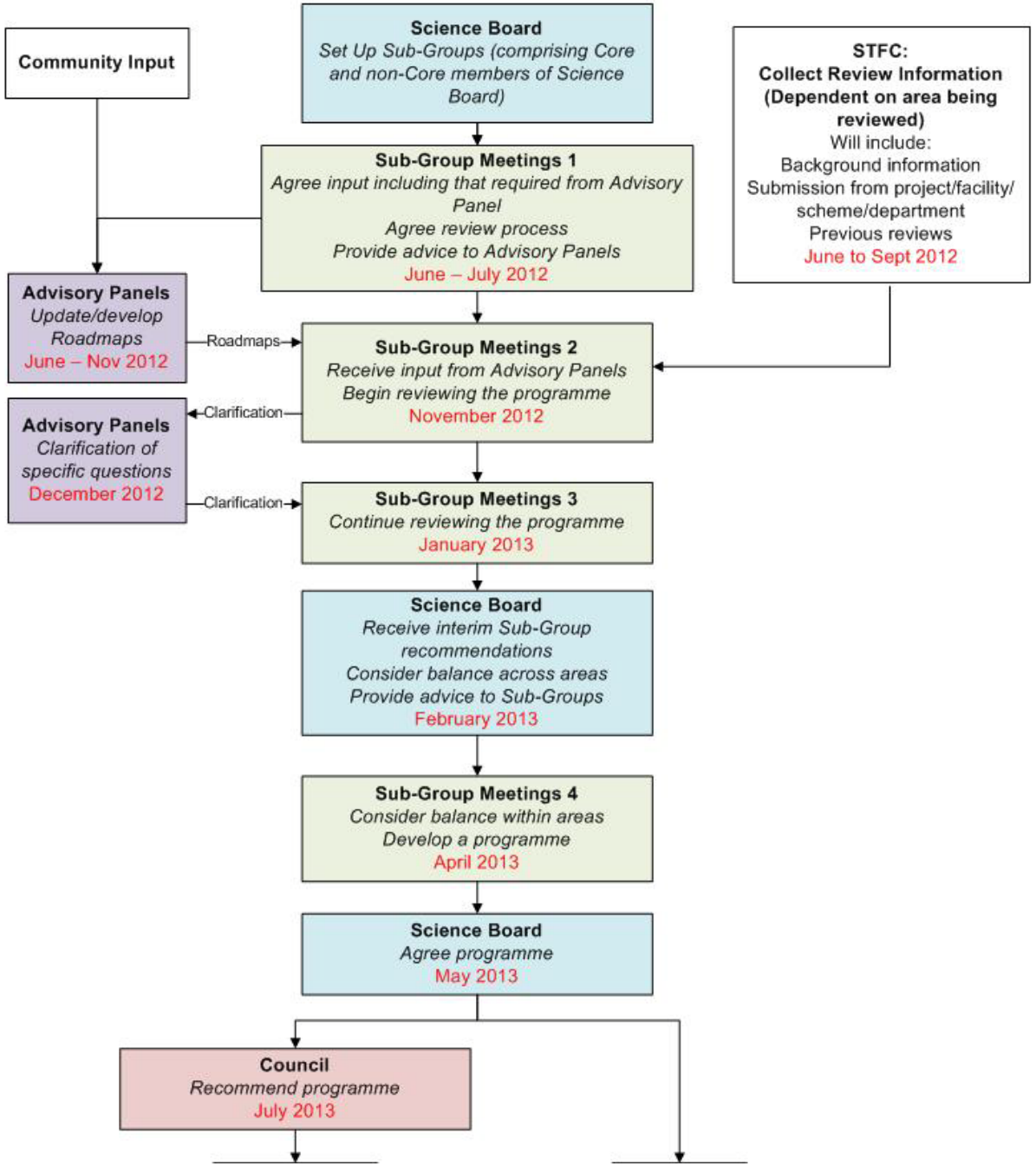
- **July 2012 – July 2013**
- **Detailed review by four Science Board Sub-Groups**
  - **PPAN**
  - **Large Facilities**
  - **Technology (for the first time)**
  - **Dedicated Impact Programmes (for the first time)**
- **Sub-Group membership:**
  - **Chaired by SB members**
    - **Core and non-core SB members**
    - **Additional membership from industry on Dedicated Impact and Technology Sub-Groups**
- **Overall recommendations formulated by SB**

Input

- **Proformas from project PIs, facility directors, department heads, programme leaders**
- **Interaction between Technology Sub-Group and others**
- **Community engagement via Advisory Panels**
  - **Particle Physics**
  - **Nuclear Physics**
  - **Astronomy**
  - **Solar System**
  - **Particle Astrophysics**
  - **Life Sciences and Soft Materials**
  - **Physical Sciences and Engineering**
- **Participation of STFC EIAB member in last two SB meetings**

Timeline

July 2012



July 2013

PR Report

- **Report presented to STFC Council in July 2013**
  - **Main report with 43 specific recommendations**
  - **Sub-group reports and other information in annexes**

- **Balanced programmes formulated for indicative financial scenarios: flat cash and ±10%**

  - **PPAN Sub-Group also considered an "optimal" programme for continuing vibrancy**

- **Publication deferred pending finalisation of Government budget allocations for FY15-16**

Some Key Points

- **All scenarios except optimal mean loss of volume**
  - **Continuing flat cash means continuing budget reduction in real terms**
    - **Less science and technology development**
    - **Less UK leadership**
    - **Less impact**

- **Heavily constrained programme now at a critical point**
  - **UK leadership and credibility becoming seriously eroded**

- **Programmatic Review provides a mechanism to keep the programme focussed on highest priorities**

Some Key Points

- **Including all parts of the STFC programme has been beneficial and should continue**
  - **Culture of rigorous and independent peer review should be further extended across all STFC activity**

- **Advisory Panels should remain active in informing and advising Science Board**

- **Continuing flat cash funding in the coming years will be damaging and difficult to manage**
  - **STFC's main priority should be to maintain capability to minimise long-term damage**
  - **Investment should be focussed on highest priorities and maintaining breadth**
  - **Work to maintain UK status as a reliable partner in international facilities**

PPAN

PPAN Sub-Group

- **Projects under development: alpha ratings 1 – 5**

- **Projects in exploitation phase**
  - **Guidance for grants panels**
    - **g1: high strategic importance**
    - **g2: high potential**
    - **g3: not well-matched to strategy**
    - **Strict peer review needed in all cases**

- **Space projects not alpha rated but g-ratings defined for exploitation funding**

PPAN Programme

- **Approx. 75% of the Core Programme**
- **Current UK programme is world leading in many respects based on past investments, but has shrunk markedly in recent years – very limited future developments**
- **Highest priorities**
  - **Maintain vigour through protecting grants line**
  - **Studentships should be scaled with the programme size**
  - **Postdoctoral fellowship scheme should be re-introduced if possible**
  - **LHC experiments remain the highest priorities for particle physics**
  - **E-ELT , SKA, and ESA space missions remain the highest priorities for astronomy**
  - **Maintain involvement in gravitational wave, dark matter, and high energy gamma ray experiments**
  - **Maintain a balanced Nuclear Physics programme including new projects**

Astronomy and Solar System Science

- **Solar System Science and Space Based Astronomy**
  - **Construction and operation funded through UKSA**
  - **Priorities for exploitation defined for AGP**
  - **Highest (g1): Rosetta, JUICE, Solar Orbiter, JWST, Euclid, Planck, Herschel, Gaia**
- **Ground-based**
  - **ESO facilities (g1)**
  - **E-ELT, SKA (α5)**
  - **LOFAR, e-Merlin, UK ARC, WHT/WEAVE, NGTS (α4)**
  - **Planning line for LSST**
  - **Concern over northern hemisphere access**
- **Astronomy instrumentation/techniques**
  - **Opportunities for and importance of continuing development**
- **Theory – g1**

Particle Astrophysics

- **Gravitational Waves**
  - **Advanced LIGO (α5)**
  - **Einstein Telescope preparation (α4)**

- **High Energy Gamma Rays**
  - **Main opportunity for the future is the CTA (α4)**

- **Dark Matter**
  - **Coordinated UK community**
  - **Future opportunity for significant UK participation in future direct dark matter searches**

- **Unlikely to be possible to retain a leading UK involvement in both CTA and direct dark matter searches: tensioning needed**