European Spallation Source ready to start construction

Having secured about 97.5% of its construction money from 13 member countries, the European Spallation Source (ESS) has announced that it will break ground in Lund, Sweden, in the fall—more than a year later than first planned.

“We are thrilled to be able to move ahead,” ESS Director-General Jim Yeck said in a statement on Friday. In February 2011, ESS's 17 partner countries agreed to work together on the project, but each government then had to negotiate its contribution individually. “Each country went through its own independent process of deciding to join, and fund ESS, and that takes time.”

ESS's announcement came on the same day as Germany said it would pony up 11% of the construction's €1.8 billion price tag, plus €15 million a year for operating costs thereafter. This was the tipping point to get the construction going, after similar agreements with other member countries in recent months. (The United Kingdom agreed in March to cover 10% of the costs, and Spain said in February that it would pay a 5% slice. Sweden, the main host country, will foot 35% of the bill.)

“It was a long overdue decision,” says Peter Tindemans, secretary-general of the European researchers' organization EuroScience, who served as ESS chair from 2000 to 2010. “[ESS was] working hard on it … but I'm surprised by how long it took to get these results.”

Tindemans says tight finances partly explain why it took so long to complete the negotiations. Last month, for example, Germany withdrew from the Square Kilometre Array, a giant international radioastronomy project, seemingly because of “difficult national financial circumstances.” Another

reason for the delay is that countries provide in-kind contributions and not only cash, which makes the negotiation process more complicated, Tindemans adds.

ESS is a European project to build a high-power neutron source, producing very bright neutron beams to study the fine structure of materials. Instead of a nuclear reactor, ESS will use a proton beam colliding with a metallic target to produce the neutrons—a process known as spallation. The first experiments are expected to begin in 2023, with up to 3000 visiting scientists using the facility every year.

At the moment, ESS is a public company owned by Sweden and Denmark. It has applied to become a European Research Infrastructure Consortium, which would be owned by all the member countries and enjoy privileged conditions, including tax exemptions.