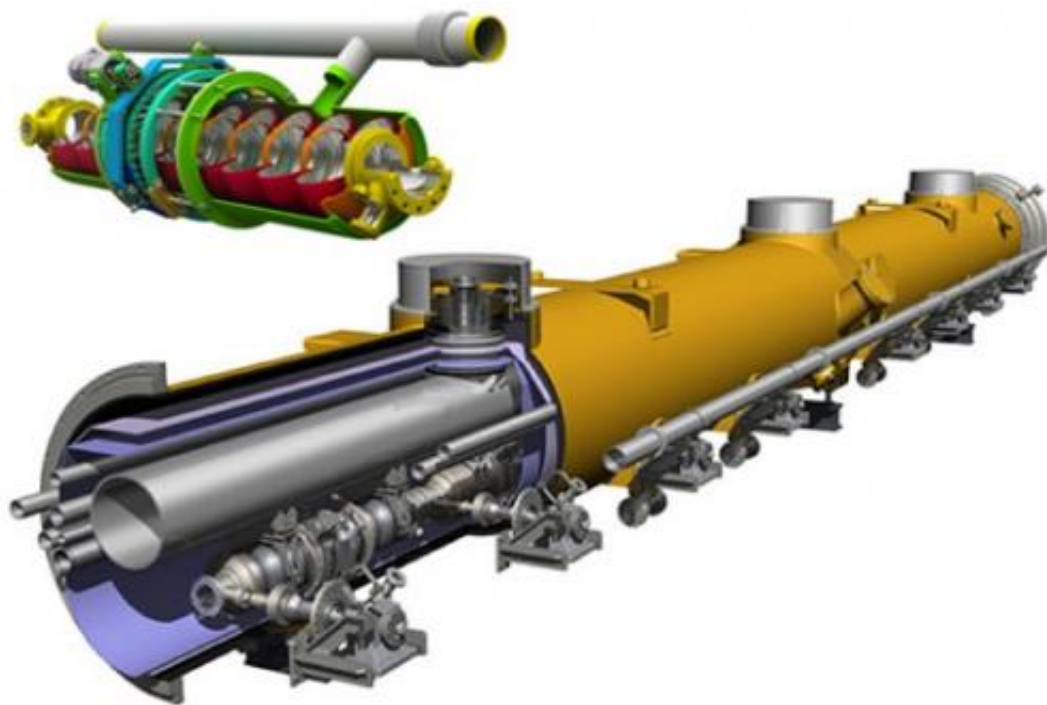


# Panel calls for unified proposal for ambitious X-ray laser

July 31 2013, by Bob Yirka

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(Phys.org) —A panel of experts convened by the U.S. Department of Energy has suggested that the DOE fund just one laser, rather than the two that were expected to receive funds for a new type of research facility. In contention are Lawrence Berkeley National Laboratory (LBNL) and SLAC National Accelerator Laboratory in Menlo Park.

Both are current DOE funded laboratories engaged in X-ray technology.

Initially it was assumed that the Next Generation Light Source project already approved by the DOE at LBNL would receive additional funding for a new type of X-ray laser, but doubts arose as to whether it could fulfill the requirements of wide variety of researchers. That led to a proposal from SLAC to add on to an existing facility to fulfill the needs of researchers at a reduced price.

At issue is the construction of what be the world's most powerful source of X-rays—achievable by "wiggling" a stream of electrons whizzing around an accelerator using undulating magnets. The result would be a [free electron laser](#) that has an adjustable and speedy pulse rate, useful for experiments where a target is struck once, such as to break apart an atom, then struck again immediately with the next pulse, to break apart its [subatomic particles](#).

At one point, both labs were being considered for funding—one that would provide low energy rays, and another that would provide high energy rays—the different types would be come about by variances in the [pulse rate](#). But that idea has been shot down apparently as the panel (the Basic Energy Sciences Advisory Committee) has found that building two facilities would simply cost too much. They suggest the two facilities work together to create a proposal that would result in the construction of just one facility that could fulfill the requirements of researchers working at both levels. They suggest a facility that works at a fast X-ray pulse repetition rate and also has a large X-ray photon energy range.

In response to the change of heart by the panel, managers at both facilities are apparently scrambling to amend their individual proposals to meet the newly expanded guidelines. Each reportedly involves increasing the original budget to add features not previously discussed in

their prior efforts, with the hope of being chosen as the sole research site.

**More information:** [www.lbl.gov/ngls/](http://www.lbl.gov/ngls/)

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