Ten Best-Practice Guidelines for Solar Development

By
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LONDON — Recently published guidelines that the UK Solar Trade Association (STA) says its members will follow in building and managing solar farms have set out best practices for siting, land use and community engagement.

The "10 Commitments", which the STA says were put together over a three-month period by leading solar developers, are based on the premise that solar farms "must be developed by listening to the concerns of the local communities, being sensitive to the landscape and protecting the ecological value of the land."

Analysts believe the solar industry needs to act quickly in order to maintain a positive image and avoid being drawn into the ongoing controversy over onshore wind development in the country. Wind has become a political issue, with MPs representing rural areas speaking against it and, in response, a recent government announcement that communities will have the right to veto wind projects in their area. So far the debate over siting and visual impact has spread to include solar projects in some regions, but not at the same national level as wind.

However, popular national newspaper The Daily Mail has called "massive" solar farms a "blight" on the countryside and accused solar developers of building as large as possible in order to "rake in" money. The paper celebrated energy minister Greg Barker's recent announcement that, in addition to the rules regarding wind, local residents will also be given the power to veto the construction of solar farms.

He also pointed to land with no real agricultural value except for grazing sheep, "marshy land or land that can't grow crops." If (and only if) the location is right, this type of land is suitable for solar fields, he said.

Suitable land for a solar field (Tavells solar farm pre-construction), courtesy Lightsource Renewable Energy

Commitment 2. We will be sensitive to nationally and locally protected landscapes and nature conservation areas.

Building solar fields close to protected landscapes and conservation areas is "totally taboo," Noble said.

"Likewise, the first thing you should do is to go and see the local people, go to the local council, to the village halls, talk to them and see what the area is really about. It's easy to pick quick wins, but better to spend the time picking the right site which won't impose negative impacts," he cautioned.

The UK's very first, smaller solar fields were built level to keep the height of the panels down so they could be hidden behind hedges, Noble explained. Once construction work was finished, grass and weeds would grow under the panels and, if not cared for, would grow above panel height and cause shading, so it was necessary to cut the grass regularly. Developers then realised that if they built the panels slightly higher, the land could continue to be used for grazing sheep, and Noble said most new-build sites now encourage this outcome.

"It's been a bit of a lesson for both sides," Noble said. "The solar companies hadn't realised they could make their sites multi-purpose and the farmers hadn't realised that the plants will still grow."

Commitment 3. We will minimise visual impact where possible and maintain appropriate screening throughout the lifetime of the project managed through a Land Management and/or Ecology plan.

"Our philosophy is, do not put solar fields on hillsides where you can see for miles around. Pick flat sites that are well-screened by hedges and trees, away from roads and housing, so no one even knows they're there – so they're invisible to the public," Noble said.

Hedgerow via Shutterstock

"Some people have got the impression from the negative press that solar fields can be everywhere, that we'll suddenly lose all this green and pleasant land – but it doesn't mean that," he continued. A solar power generator needs access to a local distribution system, ideally 1-5 km from the site. "In effect," Noble said, "the local distribution system is just a few fine lines

across the country. As you move away from towns and cities there's an occasional grid and that's it," leaving only limited swaths of rural land that are suitable for solar.

Around 7 GW, or one-third of the government's 20 MW target for power from renewable energy sources by 2020, is expected to be provided by solar fields. Noble said there are now 100-150 solar fields in the UK, and around 200 are expected by next March.

"At the moment the grid is accommodating some solar, but the grid people say it can't accommodate much more in those areas and developers are now looking at other areas where the grid still has capacity," he said. "What the distribution network operator is after is for us to spread the solar fields thinly across the country so they're connected locally and don't cause problems in one area."

Commitment 4. We will engage with the community in advance of submitting a planning application.

"We want to make certain that communities have the right information," Noble said. "If planners are approached by people planning to develop a solar field on the wrong site, the planners should reject those projects. We would help a planner to understand what the site will look like afterwards, and if it wouldn't fit the criteria I'd say reject it."

The National Solar Centre, opened in April 2013, offers guidelines for solar development (the STA's best-practice guidelines are separate). "What happened was, when people first started to build solar fields, they focused on the southwest around the Cornwall area," said Noble. "The Cornwall planners realised quickly that some sites put forward were very visual, and they quickly drew up some guidelines. Now those guidelines apply to the rest of the country through the NSC."

But tensions in local communities are growing despite what some have called the industry's "charm offensive." According to a report on the STA's new guidelines in regional newspaper This Is Cornwall, local MP Jeremy Browne has called large solar farms a "monstrous desecration" of the countryside. The paper also quoted MP Dr Sarah Wollaston as saying, "We need to be careful that we don't fall for a false sense of reassurance [from the STA]. People are right to be concerned."

"There has been a lot of media hype," Noble said. "There is a big political debate going on at the moment where certain parties are against renewable energy and some are for it. The majority of people support the use of solar." And, he said, the STA has found that, provided that solar fields are sited properly – not near houses, and well-screened from view – "people are happy with solar fields."

Noble says he understands the negative reactions: "Some projects simply shouldn't have been built," he says. But he hopes the new guidelines will offer ways to engage with communities. "These companies in the STA of course are interested in long-term sustainable businesses, not in just doing a couple of jobs now and disappearing, which unfortunately has been the impression some have given," he said. "Although our commitments can't control the whole industry, a large number of major players are STA members and we're hoping that their doing it right will encourage others to follow suit."

Commitment 5. We will encourage land diversification by proposing continued agricultural use or incorporating biodiversity measures within our projects.

Noble pointed to a countryside initiative that aims to encourage the re-growth of wildflower meadows that were eradicated due to farming. In one unintended example, a large meadow of chamomile flowers was found to have covered a solar field owned by the UK's biggest developer, Lightsource Renewable Energy. This spontaneous "natural colonisation" occurs without the intervention of planting or seeding where the setting is right for a particular species to thrive, Lightsource said, speculating that because chamomile plants favour soil disturbance, the churning of the ground during installation followed by five months' rest while the farm has been generating power could have offered ideal conditions.

Noble said Lightsource is now revisiting its previously-built solar fields with an eye toward creating more meadow sites.

Wild chamomile flowers growing on solar field, courtesy Lightsource Renewable Energy

Commitment 6. We will do as much buying and employing locally as possible.

"Our philosophy is that a solar panel and inverter will come from somewhere else," Noble said, "but once you bring them to the site, a lot of works have to happen before they start producing energy. It's pointless going out of the area to get a contract for fencing or similar work."

Early in the STA's involvement in solar projects in Cornwall "we looked at what sort of capability the local businesses, builders, contractors etc have, then set that out in a guidance document for anyone wanting to develop projects. We had a list of fencing people, a list of groundworks people, people who could build a trench to put a cable in," Noble said. The piling associated with solar farms isn't really as the construction world would know it, he continued – rather it's the same way farmers would put fenceposts in. While it is unavoidable that some specialists will need to be brought in, he said, much of the work can be done by local labour, "and training them while you're in the area brings a lot of benefit for local residents."

Once a solar system is installed and running it needs very little maintenance, but it does need some, he continued. "What's the point of having automated

Tavells solar farm during construction, courtesty Lightsource Renewable Energy

Commitment 8. We will seek the support of the local community and listen to their views and suggestions.

A new survey by polling firm YouGov has shown that much of the British public are in favour of either "any" or "good quality" solar farms. When best practice is included in the equation, public support grows to 71 percent. Of this total, while 18 percent of respondents would support "all solar farms because we need to urgently address climate change and increase renewable power generation," 53 percent said they would support "good quality solar farms, if it is sensitive to local needs and helps biodiversity (i.e. ecosystem) and farmers."

STA CEO Paul Barwell welcomed the government's new rules for solar planning, commenting, "The more guidance the solar industry has, the easier it will be for us to deploy solar power in a way which is sensitive to the needs and concerns of local communities. Many of the specific factors, such as

encouraging effective use of previously developed land and increasing biodiversity, are absolutely in line with our own industry commitments."

Commitment 9. We commit to using the solar farm as an educational opportunity, where appropriate.

At the 5 MW Wilburton Solar Farm in Cambridgeshire, developed by the Abbey Group in partnership with Lightsource, the developers have already put this commitment into practice. As part of their focus on renewable education, they have installed 4 km of solar PV on Wilburton's primary school and built an amphitheatre from which the children can view the solar farm.

Lightsource offers a resource pack for the school's teachers which features activities such as taking readings of the electricity generated by the solar farm and monitoring the weather's effects on solar yield. It also offers lessons on climate change and shows how solar power works.

The local parish council's website notes that the Wilburton solar field is "comparatively well hidden from any public views." It says the land "can still be used for grazing underneath the panels, and even if the land needs to be used for other purposes in the future, the panels can be removed without damage to the environment." The project was initially approved by the council in a vote of 10-1, with no objections recorded from local residents and benefit to the community cited.

Wilburton solar farm, viaThe Abbey Group

Commitment 10. At the end of the project life we will return the land to its former use.

Solar fields can leave the land in better shape than before, Noble believes, while agriculture can be destructive. "In terms of birds and animals, there's been a lot of concern about farming over the last few years, specifically about the disappearance of hedgerows," he said. "By putting solar panels in for a temporary period of 25 years, you can encourage all sorts of creatures back to the land. Bringing back birds, insects etc also helps to pollinate adjacent land and trees," which will help farmers such as apple and pear growers who have had pollination problems due to a lack of sufficient numbers of insects.

Solar fields can offer farmers added benefits and also preserve natural features, Noble said, "while at the moment there's nothing in the farming world to stop them taking out more hedgerows and cultivating as much land as they can."

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