Solar security

R. James Woolsey is impossible to stereotype. The nation’s top spy during the first term of President Bill Clinton, a Democrat, Woolsey actively campaigned for Republican John McCain in 2008 and is backing Republican Mitt Romney for president this year. But the one-time CIA chief departs dramatically from most Republicans on energy and environmental issues, largely for national security reasons, Woolsey is a big supporter of renewable energy, especially small-scale solar.

If one were to conjure up the image of an aging hippie manor, it might look startlingly like the home of R. James Woolsey and his wife, Sue. Located in Harwood, Maryland, just south of Annapolis, the Woolsey home – which is like some English estate in that it has a name, Waterfields – has an intimate connection with both history and nature. Located on 35 acres, the converted farmhouse turned upscale residence has sweeping views down to the West River, where during colonial times boats loaded with lumber used to pass en route to England. From the home’s back porch, it’s possible to see Tulip Hill, a brick plantation house that is considered one of the nation’s best examples of Georgian architecture and a place where George Washington spent a couple of nights.

It’s not just the location and the legacy of Waterfields that would make it the dream retirement spot for, say, a Berkeley history professor. In the garage are a Chevy Volt and a Toyota Prius, the automobiles of choice for environmentalists, and the white pickup truck used around the farm runs exclusively on biodiesel. To make it even more enviable to the green-inclined, the roof of the garage is covered with 30 polycrystalline solar panels, which the Woolseys had installed 6 or 7 years ago (neither can remember exactly when or what kind of panels they own). Teamed with the lead acid batteries housed in the basement, the solar comes in handy keeping the lights on during power outages, a not rare occurrence in a spot so rural. His surroundings and his early embrace of photovoltaics (PV) notwithstanding, James Woolsey is by no means a stereotypical 1960s throwback.

Best known for his time as director of the Central Intelligence Agency (CIA) from 1993 to 1995, Woolsey doesn’t fit neatly into any narrow political slot. Over the course of a high-level, multi-decade career in government, Woolsey received presidential appointments from two Democrats and two Republicans, including a stint as Under Secretary of the Navy and as a negotiator in the US-Soviet Strategic Arms Reduction Talks. A self-described Scoop Jackson Democrat – a reference to Henry Jackson, the late, long-serving senator from Washington state – Woolsey calls himself a hawk on national security matters and a dove on domestic policy. Deemed a neo-conservative by some observers of foreign affairs, Woolsey advocated the overthrow of Iraqi dictator Saddam Hussein in the 1990s and, more recently, has been vocal in his warnings about the danger of Iran obtaining nuclear weapons.

Not green: red, white and blue
But it’s in his attitudes towards energy and its impact on all manners of national security that Woolsey’s hawkish and dovish philosophies seamlessly meld. Indeed, his environmentally friendly house is the embodiment of the direction Woolsey hopes to see the US move in order to become both safer at home and more respected throughout the world. While Woolsey believes in the importance of addressing global warming – he has testified to Congress urging action – it’s largely as a way of enhancing US security that he trumpets the idea of getting millions more Americans to follow his lead and install solar panels on their homes.

To get a full grasp of the former CIA chief’s energy philosophy, all one has to do is step into his study. There, amongst crammed bookcases and memorabilia from his days as a top government official, are photos of the environmentalist John Muir, General George Patton and Gandhi. Think of the trio as his muses. Indeed, when he thinks and writes about energy issues, he tries to find solutions that Muir’s environmental concerns could agree with Patton’s obsession with security and Gandhi’s push to improve the lives of the poor. »You end up heading towards distributed generation for each of those reasons,« he says. »For example, before Fukushima, Muir was getting more and more enthusiastic about nuclear because of the lack of carbon dioxide and the one who was really opposed to nuclear was Patton, because he was really worried about proliferation.«

For someone like Woolsey, inclined to favor Patton’s emphasis on security, the reasons to emphasize small-scale solar are innumerable. For example, Woolsey sees...
plentiful distributed generation as the antidote to attacks on the electrical grid. »If anyone wished to launch a national blackout, they could coordinate attacks in a few rural grassy fields, where major transformers are located. If enemies didn’t want to bother with the travel, our grid is laughably open to cyber attack,« Woolsey wrote in an article for the journal World Affairs. This would be catastrophic, he noted, because it would mean basic economic functions would cease rapidly along with essentials such as water, sewage, communications and groceries. »The military won’t bring it to you because they are on the grid, too.« Along these lines, Woolsey has been adamant that not enough discussion of smart grids has considered national security. »As they redo the grid, they ought not to just add features that make it possible for you and me to turn down our air conditioning (AC) on hot summer days from our cell phones,« says Woolsey, who these days is a venture partner at Lux Capital Management and chair of the Foundation for the Defense of Democracies. »We could make it possible for a teenager in Shanghai to turn down our AC and more. People have to think about that.« From his perspective, a poorly done smart grid will be vulnerable to attack from terrorists or anyone intent on creating mischief. In fact, he says that it would be simple for tech-savvy eighth graders to take down the grid using nothing more sophisticated than off the shelf software.

How does PV help? What Woolsey would like to see is the establishment of so-called micro-grids that can operate autonomously in the event that the transmission grid is attacked. For that to work well, Woolsey believes there needs to be independently functioning portions of the distribution grid, or what he calls islands, that would continue to operate because they would be powered primarily by small-scale PV systems. But in both the development of the smart grid and in the evolution of the US solar market generally, Woolsey says this potential is being largely ignored.

Channeling his three energy muses – Muir, Patton and Gandhi – Woolsey says the focus on large-scale solar is misguided, especially from the perspective of Patton, the tempestuous World War II general. »We have gone pretty much solely for large utility-scale stuff. And that does not solve any of the Patton problems. It only makes them worse,« he says, noting the big solar parks still need to feed their energy through long transmission lines and are themselves vulnerable to attack. »’It’s a wash for Muir and Gandhi hates big stuff. It’s not going to help the villages.«

The one proven approach
As a long time supporter of solar, Woolsey is accustomed to getting teased by colleagues and friends about it being an impractical source of affordable electricity. These days, though, he has a quick rejoinder, one that gets stronger and stronger as prices for PV continue to plummet. »What I tell people who come at me with solar is so expensive is you might not be as up to date as you think you are,« he says. »And tell me, were you one of the folks who in the beginning of the 1990s said you’d never be interested in cell phones because they’re always going to weigh seven pounds and need their own separate suitcase?«

While the dropping price of solar energy is vital and has helped spur real growth in the US, Woolsey says his vision for improved security via small-scale solar is missing one important ingredient: the availability of feed-in tariffs. »It’s the only proven way to finance distributed generation,« he says. Woolsey is dismissive of the wide range of rebates and solar renewable energy credit (SREC) markets currently in place as being far too complicated and confusing. When he hears others joke about what many Americans consider to be overtly burdensome bureaucracy in Germany, home to the world’s most successful feed-in tariff, he tells them about a presentation Craig Lewis gives.

Lewis is executive director of the CLEAN Coalition, which promotes the implementation of feed-in tariffs in the US. He shows two slides: one pictures a sea of documents thumb tacked onto a wall, while the other has exactly two sheets of paper. The slide with all the paper represents the documentation required to install a photovoltaic system in the US; the image with just two pages shows what it takes to put up a PV system using the feed-in tariff in Germany. »We are the joke,« he says. »The Germans get to laugh about our bureaucracy and they are absolutely right.« It’s not just the simplicity of the feed-in tariff that appeals to Woolsey, who is a board member of the CLEAN Coalition. It’s also about tapping into self-interest, because well-designed feed-in tariffs allow homeowners to make money by installing solar.

»The feed-in tariff financially is the heart of the matter. What you want is people to take literal and figurative ownership,« he says. He also believes that having people regard solar as an investment along the lines of a certificate of deposit (CD) or money market account is much better for the long-term sustainability of the industry than developing huge solar parks. »The trick here is for solar not to be, on the whole, some giant installation that cost hundreds of millions or billions of dollars and requires giant loans and loan guarantees,« he says. »But something that your neighbor says, Hey, you’re doing well with that thing and you had your lights on when the power went out last week. How much would it be to put up a couple of kW on the roof?«

As someone who has been in and around the political world most of his life, Woolsey understands the near impossibility of implementing a national feed-in tariff – the fact that we live in a federal republic means that states more or less control electricity markets. Woolsey says that just means feed-in tariffs need to be enacted state by state, with a large one taking the lead. »If we got on large state, Colorado or someplace, to implement a feed-in tariff then people could see what it’s effect was. What that does is make it plausible for the local banks to finance what’s going up on your roof,« he says. »And now with solar so cheap, it shouldn’t cost very much.«

Part of a bigger picture
Obviously, solar and distributed generation is only part of any energy and national security equation. In fact, Woolsey’s emphasis on solar is relatively new. For almost four decades he has been convinced that truly enhanced national security will only come as the result of moving away from imported oil – a position he still strongly...
Both sides are wrong: Woolsey faults both Democrats and Republicans for the cars are widely available. believes natural gas needs to be used increasingly for transportation before electric Electric cars are coming: Shown with his Chevy Volt and Toyota Prius, Woolsey a man and his muses: James Woolsey, shown here in his study, channels Gandhi, while negotiating arms control agreements with the Soviets.

Tools of the trade: Former CIA chief James Woolsey received these Russian dolls more than 5 years.

Walking the talk: James Woolsey, shown here with wife Sue, doesn’t just make pronouncements about the need for more solar. He has had a rooftop PV system for more than 5 years.

For electricity generation, Woolsey envisions an increasing partnership between solar and natural gas, which he is convinced can be extracted in an environmentally sensitive way. What he’d like to see is solar handle an increasing proportion of America’s daytime and peaking electricity needs, while natural gas handles baseload power. The amount of solar that can be used for baseload power will increase, says Woolsey, with one important development. »The big kick for solar taking a very heavy role would come with affordable batteries,« he says. This partnership is one he thinks those in the solar industry should not fear, especially since he believes natural gas could get more expensive as it is increasingly used for transportation. »I think the growth stocks in electricity generation are solar and natural gas,« he says. If only we could ask Patton, Muir and Gandhi.

Caption: Walking the talk: James Woolsey, shown here with wife Sue, doesn’t just make pronouncements about the need for more solar. He has had a rooftop PV system for more than 5 years.

Electric cars are coming: Shown with his Chevy Volt and Toyota Prius, Woolsey believes natural gas needs to be used increasingly for transportation before electric cars are widely available.
Both sides are wrong: Woolsey faults both Democrats and Republicans for the simplistic public debate about energy.