

A similar claim can be made for parliamentary as opposed to presidential democracies (Fig. 1). In a paper published in 2007, Per Fredriksson, an economist at the University of Louisville, Kentucky, and his colleague Jim Wollscheid, of Texas A&M University, reported¹⁹ that presidential systems enact environmental policy so distinctly from parliamentary systems that, by this measure, their behaviour is not significantly different from autocracies. “Even when we excluded the United States from the model, there were no material shifts in the results,” Fredriksson points out. His explanation focuses on the greater degree of legislative cohesion found in parliamentary systems: within their sample of democracies with parliaments, they further found that nations in which the government faces an investiture vote (a vote of confidence that must pass before the government can assume office) set even stricter environmental policies.

Patient optimism

There is a caveat to Fredriksson and Wollscheid's conclusions, which unlike much of the other work offers a little hope for climate outcomes. Only when the researchers treated ‘partly free’ countries — those with mediocre scores for indicators such as the fairness of their elections — as autocracies, did a positive, significant relationship emerge between the presence of democracy and reductions in greenhouse gases per unit of GDP and per capita. So democracy cannot be middling if it is to help the climate. But it can help.

This detail fits two other findings. One is the conclusion that the type of political regime makes no difference to developing countries' greenhouse gas emissions²⁰. Among developing countries, many democracies are unconsolidated

and ‘partial’, which may explain this result. The same study also found that developing countries perform better if they are members of intergovernmental organizations, proffering the proposal that expanding inclusion may bypass humps of environmental Kuznets curves — the usual path whereby countries grow rich before they grow clean.

The second finding is the result of a recent collaboration between Fredriksson and Neumayer²¹. They reason that the mechanisms through which the inhabitants of democracies are expected to demand more climate action from their leaders will take time to emerge, and will be contingent on the expectation of future democracy in a policy arena where costs occur in substantial advance of benefits. This introduces the concept that a country has a stock of democratic capital that can be quite different from its current level of democracy. Serbia and Sierra Leone, for instance, may score highly on measures of democracy today, but their limited democratic histories are probably a constraint on the extent to which citizen pressure groups have organized themselves into effectiveness, institutions have matured, and on expectations for democracy in the future.

Fredriksson and Neumayer tested the association between countries' adopted climate mitigation policies as indicated by CLIMI (the Climate Laws, Institutions and Measures Index, which is derived from the 2005–2010 annual national communications to the UNFCCC) and various measures of democratic capital over three periods (1800–2010, 1900–2010 and 1950–2010). They conclude that historical experience with democracy is what promotes climate policy. Present-day quality of democracy becomes irrelevant in their models when democratic capital is accounted for.

This is depressing news for impatient climate change activists. It suggests that the recent shrinking of democracy's global presence is causing an invisible setback for the adoption of mitigation policies. Encouragingly, however, many countries that became democratic during the greatest upturn in democracy, the Third Wave, have been consolidating for decades now. On balance, the message from the data is that the world can realistically expect more political assertiveness on climate change to follow from more democracy. And perhaps eventually, more action. □

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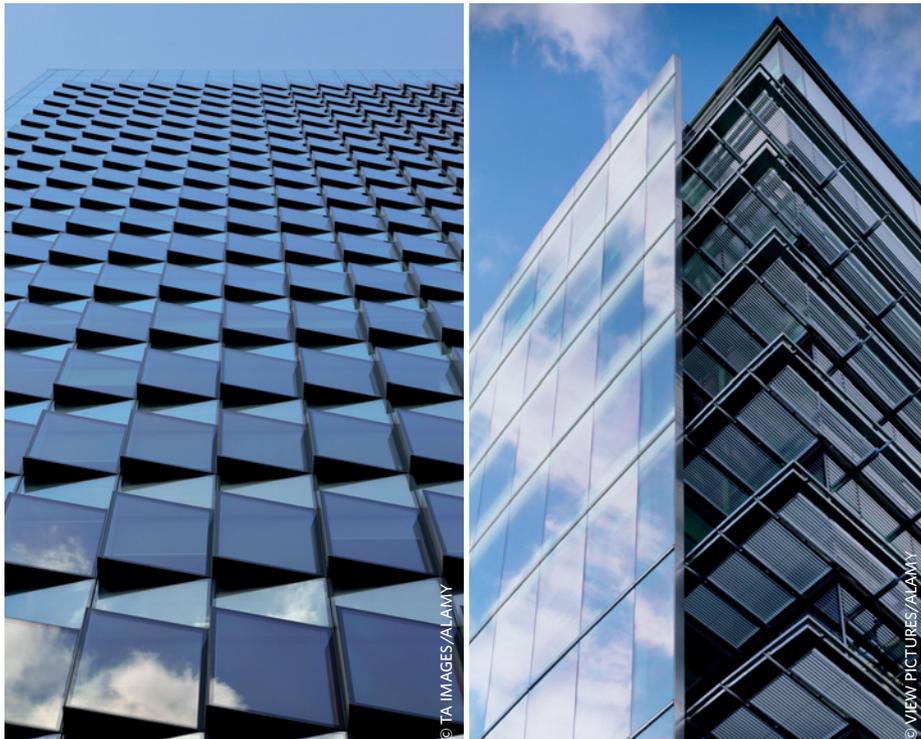
Mandatory buildings disclosure in the United States opens the door to improved energy performance. Other countries could follow suit, explains **Elisabeth Jeffries**.

Describing the modern building as “the theatrical demonstration of its functional ideal,” the critic Dan Cruickshank in 1989 drew attention to romanticism in twentieth-century architecture. That romanticism has,

perhaps, nowhere been better expressed in more recent times than in the green building label.

In New York in 2013, claims suggested that the new Bank of America tower, which had received a platinum rating under the

Leadership in Energy and Environmental Design (LEED) buildings rating system, was actually among the poorer-performing skyscrapers. Reports indicated it used more energy per square foot than comparable office buildings in Manhattan.



Left: Ropemaker Place, London. Right: 10 Exchange Square, London.

In the United Kingdom, property management firm Jones Lang LaSalle published a study¹ in 2012 on the non-domestic sector. It compared two buildings (pictured), revealing that Ropemaker Place, with a better rating according to its Energy Performance Certificate (EPC), was actually less energy efficient than 10 Exchange Square, a more poorly rated property. EPCs, introduced for particular kinds of building (for example non-domestic with a floor area over 50 m²) through European Union legislation, provide an energy efficiency ranking for the built environment.

In Europe, carbon targets are looming. EU members have, for example, agreed to a 10% reduction by 2020 of emissions from sectors not covered by the European Emissions Trading Scheme (ETS), including buildings. But the property sector, it seems, has hardly taken a bite out of the emissions carcass. Or at least, that is a difficult question to assess, because no one has captured the full picture on buildings. “Who’s measuring? No one knows energy performance,” says Jo Harris, Sustainable Buildings Group Manager at the Building Services Research and Information Association, a UK consultancy and research organization for this sector.

Energy disclosure is only mandatory in certain circumstances and for certain

types of building. What is more, some individual buildings ratings are wrong, and public data on comparative performance between buildings are hard to obtain. That means that benchmarking — often used to drive performance improvement — is difficult. Yet it is one of the few methods for comparing the existing performance of a property with its potential efficiency.

“I am amazed at the jumble. When you get information on how much energy is consumed per square metre, is that good or bad? You don’t really know,” comments Richard Francis, principal at The Monomoy Company, a consultancy specializing in sustainability and the built environment. More is known about new developments, which are subject to distinct carbon emissions rules. But Francis points out, “Everyone knows carbon reduction cuts have to come from the existing stock. Talking about new build is playing around the edges.”

The inadequacy of EPC labels, whose characteristics vary according to EU member state, is well documented. “Poorly defined label requirements and insufficient training of official certification agencies have characterized the recent introduction of energy performance certificates across the European Union,” noted Dutch experts Dirk Brounen and Nils Kok in 2011 (ref. 2).

Assumptions underlying the labels partly explain this. In the UK, for example, many use criteria based on theoretical or potential performance rather than actual consumption and take into account the type of asset generalized across different buildings. The building assessment is based on various standard elements but not on the individual actual operating performance. In the US, the voluntary LEED ratings, developed by the US Green Buildings Council, are also based on design criteria. Meanwhile, Energy Star measures energy consumption.

Individual initiatives, surveys and projects have thrown up information on building types, numbers and performance. For example, the UK Carbon Trust, which helps businesses and other organizations to manage carbon emissions, states that there are two million non-domestic buildings in the UK. It confirms that buildings are responsible for 40% of EU energy consumption.

The organization has also conducted audits on 35,000 buildings and an evaluation of the performance of a small sample in 2006–2010. Another survey, running in 2011–2014, is assessing over 100 properties. But the last complete government survey of energy use in non-domestic buildings was run in the 1990s.

Meanwhile, analytical companies such as Estate Master help businesses to assess performance requirements within the property sector by producing private benchmarking tools. Used for commercial purposes, they will allow a company to calculate its expectations of energy use sourced from a growing database. This could include, for example, working out how much energy a certain number of elevators should be using.

In the US, the Commercial Buildings Energy Consumption Survey (CBECS) is more satisfactory than many national samples in Europe. It could perhaps be described as an embryonic non-domestic buildings inventory. Run by the federal government’s Energy Information Administration (EIA), it is a national sample survey collecting information on the US stock of commercial buildings, their energy-related characteristics, and their energy consumption and expenditures. Information is standardized so that comparisons are possible.

Around 7,000 properties are sampled. First conducted in 1979, its tenth and most recent survey was fielded in April 2013 for the year 2012. “It means you can compare one building to a larger dataset of buildings. You can manipulate data and get tables based on climate zone, vintage

of buildings, equipment in buildings and so on,” explains Jennifer Amann, Buildings Program Director at non-profit organization the American Council for an Energy-Efficient Economy.

Arguably, EU countries could learn from the US experience. The US Energy Star rating scheme, many of whose buildings scores rely on CBECS, is often considered an effective way to measure and improve buildings’ (as well as other sources of emissions) energy efficiency. “The Energy Star rating is an in-use measure that is more transparent,” comments Nils Kok, Assistant Professor at Maastricht University in the Netherlands and a specialist on green building economics. Richard Francis comments that “databases like Energy Star draw lines distinguishing who is actually delivering low energy buildings.”

Nevertheless, Kok suggests that design-based labels are a good starting point. “In the EU, most countries use a design basis for the EPC. It’s like a miles per gallon indicator for road vehicles. It’s an intuitive way to get a sense of efficiency. In principle, we’re on the right track, but the US and EU need to learn from each other,” he says.

Comprehensive mandatory reporting could be a key route to improved buildings disclosure, which in turn stimulates better performance and well-informed policy because it closes data gaps left by voluntary initiatives. It has been gathering pace in the US. In New York, for example, a new benchmarking law has come into force. Buildings larger than 50,000 square feet (about the size of a six-storey office block) have been required since 2012 to disclose energy and water consumption. Data are made public on a city website and include the name and site of the building. The Bank of America reports originated from this source.

The new, locally generated law is part of the city’s target to cut greenhouse gas emissions by 30% by 2030. Property is a main focus in the plan, because it accounts for around 75% of the city’s emissions, almost twice the national average. This is due to relatively low road-vehicle use and a modest industrial sector. In addition, the city contains a greater proportion of older buildings than many of its counterparts across the rest of the country.

So far, 10 other cities have followed suit, ranging from San Francisco to Philadelphia, and Austin to Minneapolis. “We’re seeing a lot of leadership among cities, which are starting to see how climate change is having an impact on them. In addition, we’re seeing a lack of action at the federal and state level. We need leadership at the city level because we can’t wait for the

federal government to do anything. At the same time, it’s a low-cost measure for the city itself,” explains Jennifer Amann.

As some of the data were already available through Energy Star schemes, it was not too difficult to get the project off the ground, but its reach has been extended. Amann describes it as a “good first step.” It is still too soon to analyse its impact on energy performance, which could be expected to arise from both reputational concerns and commercial incentives. Evidence from previous benchmarking initiatives demonstrates a positive effect, however. For example, an Environmental Protection Agency benchmarking survey over seven years yielded average energy improvements of 2.4% each year.

“We are starting to see promising signs. For example, we’re seeing building service and retrofit companies offering benchmarking as a service to clients. It also helps to get data on the market where other players can act on it, even where tenants can act. For instance, it gives utilities data to target buildings, while NGOs and other organizations can look at the data and get campaigns going to reward buildings,” says Amann.

Amann and other opinion leaders on the built environment are eager to emphasize the benefit of mandatory disclosure on corporate reputation, which can then motivate further action. Richard Francis comments: “If you want a building to be compliant-only you are missing a big opportunity. The mentality sometimes is ‘you do what you have to do to get recognition and that’s enough’. But certificates are enablers rather than guarantors,” he points out.

The regulatory stick often kicks off the change process. But client demand may eventually drive change more effectively and integrate environmentally friendly qualities into property valuation. Inadequate data are the reason that this is not already widespread, which is why better disclosure is an important priority. Real estate is a complex sector, often affected by opposing landlord and tenant interests as well as, in many cases, anachronistic laws. Nevertheless, Francis perceives an undercurrent of savvy negotiating relating to energy performance in private transactions, which is affecting some final deals.

“The smart observer in this [UK] market has been asking for two years about energy performance by price, and that tells the tenants whether they are dealing with a sustainable building,” he says. If energy awareness continues to spread, he

suggests, energy efficiency data will send out signals to potential tenants looking to cut a bargain. They can use energy costs as a lever for rental discussions, even if this is not their biggest running cost. Improved disclosure in the US, he suggests, may account for a more evident trend of greener premiums across the Atlantic.

But there are good reasons why better disclosure is still rare, particularly in the EU. Landlords hold energy data for the common parts of the building (such as staircases) whereas tenants hold office energy data on photocopiers, computers and so on. Whole-building data are more difficult to access in the EU than in the US. Tenants would need to make agreements with estate owners to supply the numbers.

“Clearly there’s lots of room for tenants and landlords to work together, and landlords don’t engage with them as much as they could. Lots of landlords in the UK aren’t interested in whole-building energy because they can’t control what tenants do,” says Richard Francis. Reporting based on whole buildings could, therefore, compromise the landlord. Landlords may also adopt a standard, but later discover it is inaccurate. “A big fear in the industry is claims of negligence, because nobody tests properties,” warns Francis.

There are other barriers to reporting: “People don’t want to air their dirty laundry in public. If you’re paying twice as much as your competitor up the road, you won’t want them to know,” states Jo Harris. In addition, benchmarking and surveying can be costly. But there is one obvious source of data: the energy utilities. “You could go back to the electricity companies. They know where we are compared to 1997. They could make the data available anonymously according to company type,” says Harris.

The picture is gradually becoming clearer. For example, the new EU Energy Efficiency Directive requires regular energy audits. It is, however, becoming ever more pressing to pin down the boundaries of the problem, because commercial property use will grow. As EIA forecasts³ indicate, commercial floor space will increase at an average annual rate of 1% a year up to 2035. □

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