



The G20 at the Leader's Level



Energy Security and the L20

## Energy Security at the L20? Overview of the Issues

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David Victor, Barry Carin, and Clint Abbott

This meeting is one of several in a project that is exploring the possible creation of the “L20”—a regular forum at which the leaders of approximately 20 industrialized and developing countries would convene on a regular basis. The founding logic of the L20, advanced especially by Canadian Prime Minister Paul Martin, is to provide a means for managing global challenges that have proved difficult or impossible to settle efficiently through other mechanisms such as the G8. Through a series of workshops and background papers the L20 team has refined the central concepts that could guide an L20. Notably, issues are ripe for L20 if they truly require attention of heads of government—for example, issues that require the brokering of complex package deals that cut across line ministries, and issues that require sustained high level attention because that is the one way to ensure proper follow-through. Moreover, the L20 offers the prospect of success in managing issues that require cooperation between industrialized and developing countries. Indeed, the closest analogy—the G20 group of finance ministers—was created in the wake of the Asian financial crisis and played an important role in easing adjustment to that crisis.

Our task is to see whether the L20, if it were convened, should focus on matters surrounding energy. Thus we must be severely practical. We must explore the issues to see where, if at all, leaders must be engaged and there are possibilities for meaningful agreement. Should “energy security” be on the L20’s agenda? If so, our meeting should conclude with some concrete ideas for possible elements of an L20 meeting on the topic and thus possible elements of communiqué on energy security. In effect, our goal is to anticipate how leaders from approximately 20 of the most important industrialized and developing countries could approach the issues in a collective fashion. In addition to exploring the issues of energy security we also intend to foster some discussions on the composition of the L20, the impact on existing fora, the best means to engage the major powers, and opportunities for civil society to participate in any future solutions to these global problems.

In this overview paper we introduce some key concepts and outline areas where countries may want to explore possible gains from cooperation. We also introduce the five specific topics that are addressed in more detail in other background papers.

### What is Energy Security?

“Security” has at least two meanings. First, in its narrow and traditional meaning it refers to territorial autonomy. A nation’s security is a measure of its ability to survive without territorial interference by others. Ever since Churchill moved the British navy from coal to oil there has been particularly acute attention to ensuring adequate fuel supplies. For oil is not nearly so widely distributed as coal; moreover, the assets needed to deliver useful fuels from crude oil—such as refineries and storage tanks—are themselves soft targets. Thus the ability of the nation to ensure its territorial integrity has depended partly on its skill in securing energy supplies.

Second, a broader meaning has arisen where “energy security” is the ability of a nation to muster the energy resources needed to ensure its welfare. This definition has come into common usage alongside a general expansion (many say deflation) of the concept of “security.” Some of this expansion in security matters reflects the growing importance of economic integration in the welfare of most countries. Insofar as all policies are aimed at promoting welfare, the expansionists simply maintain that attention at the highest levels of government must focus on a wide range of matters.

This diversity in definition—from the narrowest and traditional territorial focus to the wooliest notions of welfare—means that efforts to identify ways that the L20 could engage the issue require special attention to goals and definitions. While it may be useful, in some sense, to allow a proliferation of definitions and to foster broad agreements that allow every party to apply their own concept of “energy security,” useful efforts that command the sustained attention of leaders probably require more attention to goals.

## **THE PROSPECTS FOR COOPERATION: GOALS, STRATEGIES AND INSTRUMENTS**

Before turning to particular issues that might be on the L20’s agenda we set the scene by starting with underlying goals that countries might pursue, along with the strategies they might prefer and the instruments they could deploy. Our purpose is to suggest that some goals, strategies and instruments are amenable to action by leaders working in concert on a sustained basis—and thus prime for the L20’s agenda—while others suggest that concerted action is unlikely to bear fruit. Indeed, we will suggest that looking beyond goals to particular instruments there is much in the sphere of “energy security” that is not amenable to the L20’s agenda. Crafting a viable agenda will require care to ensure that the broad rhetoric of energy security does not become a liability by focusing attention on topics where the L20 is unable to make headway while eclipsing areas where the L20 could play an important role. In the subsequent section we look at those particulars.

We begin with goals. Table 1 lists a series of goals for “energy security” often articulated by governments and analysts. In general, attention to energy security within a given country has started at the top (i.e., the narrowest military and territorial concepts), only to expand and shift down the list with time. Some of this progress may simply reflect that the narrowest concepts of energy security are easiest satisfy. For example, many navies and air forces have established special reserves for marine and jet fuel; governments often have provisions in place that allow them to divert commercial and strategic stockpiles to military uses in time of emergency. Thus once these concepts are satisfied the others remain. In general, all of the most highly industrialized countries have adopted a strategy that includes elements from the middle to the bottom of the list. Less developed countries, where they have been able, have tended to concentrate near the top. While there is much attention to China and India trying to attain energy independence (more on that below), it is easily forgotten that the U.S. did the same until the early 1970s. It framed “energy security” (and the health of the American oil industry) in terms of American production; it set quotas when lower-priced imported oil began to displace the market share of dwindling (and thus more expensive) domestic production. Those quotas, in turn, made it harder for the U.S. economy to respond to the shock of the Arab oil embargo.

In addition to examining goals we must also look at strategies & policy instruments. Even if nations agreed on goals (e.g., secure lines of supply) there may be strong divergences in the preferred means of achieving those goals. To the extent that it is not possible to devise meaningful accommodations of those differences, even broad agreement on goals will not yield much leverage for collective action through the L20. On Table 1 we array (left to right) the types of strategies and instruments that are often cited in plans for attaining energy security. With “Xs” we indicate the types of strategies and instruments that are usually associated with particular goals.

This table matters because it forces careful thinking about what, if anything, the L20 could achieve if it were focused on the matters of energy security. In particular, at least three specific implications follow. First, the matrix will help our meeting focus on what is possible. We do not plan an extensive debate on the proper placing of the “Xs” in the matrix. However, the array of “Xs” on table 1 suggests that for visions of energy security in the northwest corner that the L20 may have not have an instrumental role to play. The goals, strategies and instruments that populate the northwest are mainly autarkic in nature. And where the rules of self-help dominate there is usually little space for international collaboration. Insofar as elements of the energy security agenda include locales in the southeast, then the L20, perhaps, can play an important role. Nonetheless, the L20’s utility will depend on how it amplifies or supplants other international efforts—a topic to which we will return later when we consider the international “rules of the road” and the IEA’s stockpiling program in particular.

**Table 1: Two Dimensions of Energy Security: Goals (rows) and Strategies & Instruments (columns)**

	<b>Self-production</b> (e.g., closed fuel cycle, coal to liquids)	<b>Energy mercantilism</b> (e.g., flag ownership of oil fields)	<b>Control over Sea Lanes</b> (e.g., strong blue water navy)	<b>Domestic Stockpile</b> (e.g., SPR)	<b>Promotion of alternative energy technology</b>	<b>Coordination of domestic policies</b> (e.g., fuel taxes, efficiency incentives)	<b>International regimes to coordinate stockpiles</b> (e.g., IEA stockpile stewardship)	<b>International regimes to coordinate fuel cycle</b> (e.g., collective security for SLOCs, international nuclear fuel cycle)
<b>Fuel autonomy</b> (e.g., independence in oil, gas, fissile material)	X							
<b>Assured fuel quantities for military operations</b>	X		X	X				
<b>Assured min. Supply for the economy</b>	X	X	X	X	X			
<b>Fuel Diversity</b>					X	X		
<b>Secure lines of fuel supply</b> (e.g., nuclear fuel cycles and oil & gas lines hardened against terrorist intrusion)			X	X		X	X	X
<b>Stable prices (or not excessive volatility) for key fuels</b> (notably oil, which drives prices for other fuels)			X				X	X
<b>Preventing Nuclear Proliferation</b>								X
<b>Efficient markets</b> (i.e., allow price level and volatility to signal scarcity)							X	X

The need to examine underlying interests will arise most strikingly, perhaps, in our deliberations about China and India. Both countries are becoming major consumers of oil (and other natural resources), and their domestic markets are increasingly interlinked with world markets. Both are substantial oil importers. Yet both, at the same time, are pursuing mercantilist approaches to energy that are apparently intended to assure particular energy supplies flow into the country rather than to rely on the whims of a global marketplace. Do we think that this approach is merely a costly transient that will recede as these countries accept that oil is a fungible commodity whose particular national origin matters little? Or will resource nationalism reign—especially as deals are made with national oil companies in regions in such as Sudan, Venezuela, Nigeria and Russia, that lock in an alternative means of organizing the world oil market? If the former is correct then the L20 could play an essential role in framing a transition to global engagement and cooperation for India and China along with other important nascent oil importers. If the latter is true then cooperation will be hard to forge.

Second, the prospects for convergence (or not) of underlying interests will have a strong effect on the L20's membership. The L20 must certainly include the world's largest economies and populations—it must embrace the United States, EU, China, Japan and India. Thus regardless of other members, even these core five have illustrated severe divergence in interests. Beyond those five parties, however, the criteria for membership becomes harder to devise. Should Canada, as a good global citizen and architect of the L20 (and one of the world's largest producers of natural resources), be a member? Should the EU speak with a single voice (and can it), or will the EU have multiple seats as it does in the G8 (where fully half the seats are EU members)? Russia, with its large population, nuclear weapons, and vast energy resources, also ranks for membership. If energy is to be a major issue for the L20 then probably Saudi Arabia must participate. Similarly, on matters energetic and most else that could be on the L20's agenda the institution should include key regional countries—Brazil, South Africa, Indonesia and perhaps Turkey among them. One place to start is the membership of the G20 finance ministers.<sup>1</sup> Or perhaps the L20 should not begin with 20 but, rather, a smaller and less unwieldy group in which it is easier to negotiate and form the camaraderie that is essential to a nimble and effective institution.

A third reason why table 1 matters is that the divergence in interests suggests the need for care in devising an agenda that can allow progress in some areas where common interests can be identified while tolerating divergence in others. This could lead to cooperation of the “big tent” variety—a broad umbrella agenda under which variable geometries of cooperation could emerge. The European Union, perhaps the most effective example of international cooperation ever observed, emerged because its structure allowed such multiple configurations that facilitated deeper cooperation in some areas (and with some subsets of countries) even as collective action proved difficult or impossible in other areas. Even in the areas where instrumental agreement is not immediately possible, the L20 could play an important role in promoting common

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<sup>1</sup> The G20 Finance Ministers, an institution that still exists, includes the G8, Argentina, Australia, Brazil, China, India, Indonesia, Korea, Mexico, Russia, Saudi Arabia, South Africa and Turkey. To avoid confusion, the “L20” has referred to a potential grouping of the Leaders from these 20 countries.

understanding that, with time and effort, could lead to further collective action. The G20 appears to have played such a role with finance ministers in the aftermath of the Asian financial crisis, and in many other international institutions the preferences of key countries have changed (with concomitant increases in the prospects for deeper cooperation) as the institution has focused a process of learning and adjustment.

### PARTICULARS: MARKETS, FUELS AND INVESTORS

The meeting will begin with a discussion of the broad picture and our goals for evaluating the L20's prospects and design. Quickly, however, we will shift to particulars. We will focus on the oil markets, which we consider first, and then we will look at ways that energy security considerations could affect two other primary fuels: gas and nuclear. Here we introduce these three fuels—oil, gas and nuclear—and some particular issues that could arise for the L20. The discussion is not exhaustive, and in our deliberations we will allow time to explore what may be missing; our purpose is to outline some elements that could help to set an agenda for the L20 should it be convened to address the questions of energy security.

#### Oil: Market Fundamentals, Rules of the Road, and Diversity in Supply

Energy security is a prime candidate for the L20, first and foremost, because the price of oil is headed to the stratosphere and the forward markets suggest that high prices are here to stay for some time. At its root, the problems do not appear to be related to the geological exhaustion of oil resources—so-called “peak oil”—but rather to a host of troubles above ground, such as continued rise in demand and especially the difficulty and wariness of investors in opening new supplies. Figures 1 and 2 summarize the situation with demand and supply.

Figure 1: World Oil Demand

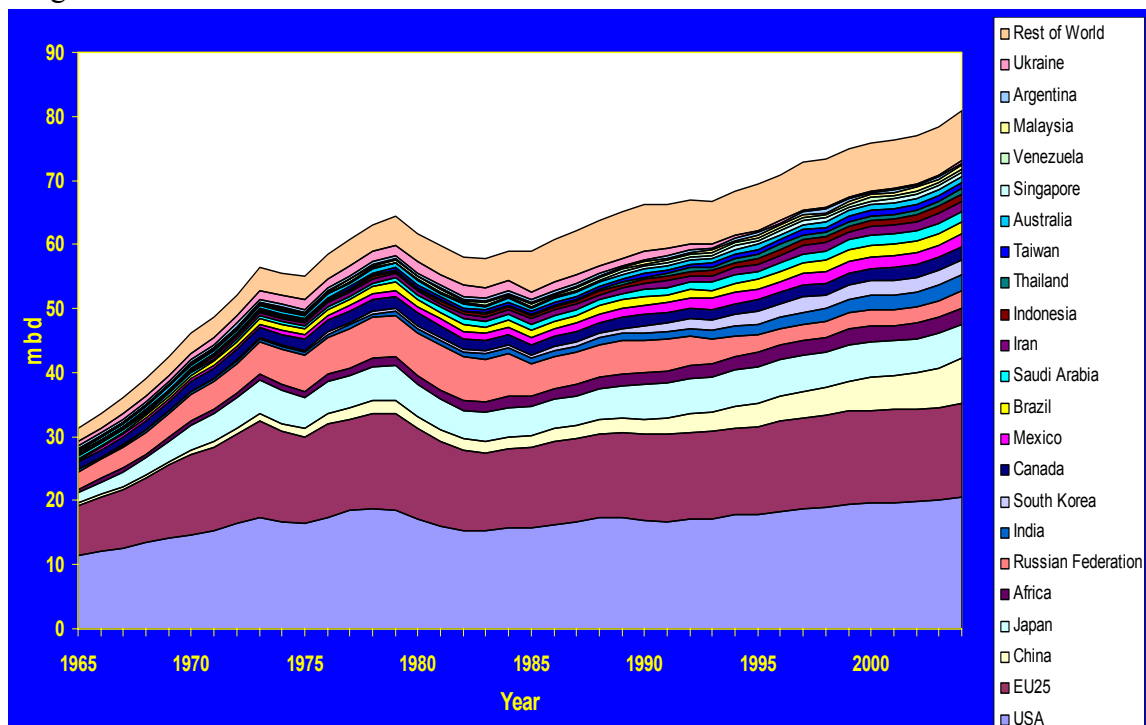
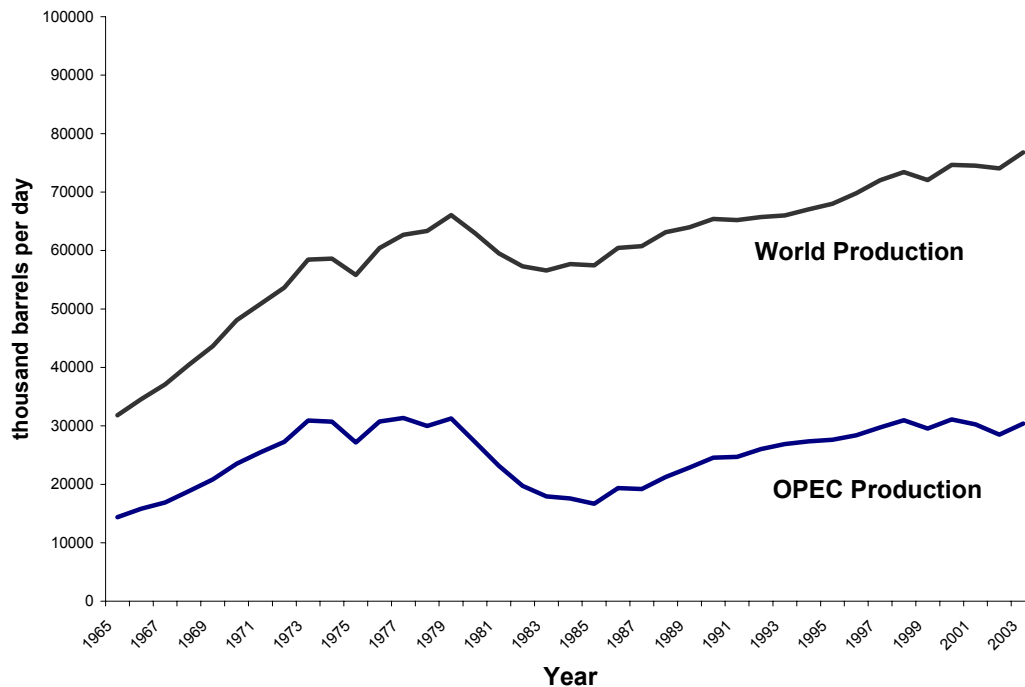


Figure 2: World Oil Supply



We look at the issues from three perspectives—each covered by a commissioned paper. The first issue is the overall balance of supply and demand, as introduced by Cordesman. The market is extremely tight, and insofar as the L20 would be animated by the desire to improve the oil market’s ability to absorb shocks it should consider whether and where it might have leverage on issues such as:

- Improving the stability (and attractiveness to investors) of oil exporting nations;
- Creating an effective coalition to break OPEC’s influence;
- Improving the quality of underlying data on the oil market;
- Encouraging investment in new spare production capacity;
- Hardening key oil export infrastructures against terrorist attack and Nature;
- Improving the modeling of oil prices and their macroeconomic effects.

Cordesman’s paper covers a much fuller array of options than the five we summarize above. However, just the above five reveal the quite diverse roles that the L20 could play and the distinct difficulties that will arise in convening the L20. We have arrayed them in order of increasing possible leverage by the L20 (and roughly decreasing importance). Fundamentally, many of the problems in the oil market are rooted in the difficulty of attracting and sustaining investment in the states that have the most geologically attractive resources. Fixing that problem, however, is no easier than solving the problem of national governance altogether, and in oil states it may be additionally difficult because of the scramble for oil money that tends to distort all but the strongest systems of government—the so-called “resource curse.” The L20

may not have much leverage on that problem, but perhaps it could help to array some solutions, such as fuller use of anti-corruption measures (e.g., “publish what you pay”) and restricted funding mechanisms (e.g., the systems in Norway, Azerbaijan and Chad—in rough order of decreasing effectiveness). The final options on this list of five are the easiest for governments to alter—for example, special programs to harden infrastructure and fuller investments in energy modeling—yet may have the least leverage on the underlying problem.

A second major issue, addressed in Klaus Jacoby’s paper, is the “rules of the road” for the international oil market. Ever since the first oil crisis of the 1970s major oil importing countries have organized themselves through the International Energy Agency (IEA) to coordinate their management of strategic oil stocks and responses to supply interruptions. Jacoby’s paper looks at the ways that volatility in oil-producing nations can be countered by collective action on the part of consumers. The IEA arrangements, which cover 60% of the world’s demand, include obligations to maintain strategic stocks (90 days worth of net oil imports), to have mechanisms in place that could restrain demand up to 7-10% of total consumption, to share oil in an emergency, and other provisions. These arrangements were triggered in the wake of Katrina, and the present moment offers an opportunity to evaluate whether such arrangements need updating. Jacoby notes that the world oil market has changed dramatically in structure since the IEA arrangements were created but that the system has evolved efficiently. At the meeting, we should consider whether there are special roles that the L20 could play in improving the system. At least two areas of possible improvement might be considered. First, the IEA arrangements notably exclude China and India (and most other developing countries); while the U.S. and E.U. are the largest consumers of oil (see figure 1), the rate of increase in China and India is staggering. (Some of the Chinese increase reflects vagaries in the electric power market that will probably settle when the building of central power stations catches up with the rate of economic growth; even then, the expected increase in oil consumption is very high.) Second, we should take a fresh look at the rules themselves since they are likely to come under increasing pressure. Some observers worry that the IEA doesn’t have enough muscle to ensure adequate collective action in the face of real crisis, although Jacoby’s paper argues that the IEA arrangements are in good shape. Moreover, the IEA (and most other energy analysts) are projecting that OPEC’s share of world production (41% today) is likely to rise again in the near future as OPEC members generally hold the geologically most attractive reserves. Does this suggest a rising dependence on a cartel that has already proved its muscle, and if so what can be done to adjust the rules of the road so possible harms are minimized?

Third, the paper by Cooper reassembles these issues by framing what could be a “world agreement on oil”—and, by implication, a role for the L20 as broker of that agreement. Cooper argues that major oil-exporting governments, notably in the Gulf, are marked by stability and are unlikely to deliberately disrupt oil exports. However, internal conflicts might spill over to affect world oil markets—a possibility that is abundantly evident in recent years. Cooper suggests two radically different strategies for addressing the problem. One is to create a forum in which existing low-cost producers (notably Saudi Arabia) would be aided in their efforts to expand production capacity as well as supply additional data needed to calm markets. The other would focus on limiting demand for petroleum through aggressive energy efficiency programs and investment in substitute energy sources. At our meeting we should debate other possible integrated packages, the role of the L20 in each and the implications for L20’s strategy and

membership. As Cooper points out, for example, a production strategy for the L20 will require the central involvement of Saudi Arabia (and perhaps other candidate producers, such as Iran, Russia and Nigeria); a conservation and substitution strategy requires the concerted efforts of major users, with the danger that oil suppliers would have a strong incentive to frustrate effective action.

### Gas: Different from Oil?

We give extensive attention to oil because it is the single largest source of primary energy (accounting for about two-fifths of the world total), as a liquid dense with energy it is the most flexible fuel, and thus oil prices tend to signal the price for all energy sources. However, we have commissioned papers on topics surrounding two other fuels, which allow the opportunity for focused discussion on additional topics that, in addition to their importance, will help us focus on a wider package of measures that could comprise the L20's energy security agenda.

A paper by Victor looks at the emerging global market for natural gas and explores whether this market will pose similar threats of security as have arisen in the oil markets. He suggests that the answer is “no”—that supplies of natural gas have proved remarkably stable for two reasons. First, gas (unlike oil) has many competitors for supplying its service, notably electric power, and thus strategic interruptions quickly become self-defeating for the exporter. Second, gas projects are generally much more capital intensive than most oil projects and thus the incentives strongly favor running a facility—such as a large production field or a LNG export train—at maximum capacity once the facility is operational, rather than adjusting output according to the price-fixing aspirations of a cartel. (By contrast, one of the chief enforcement mechanisms of OPEC has been the availability of spare capacity, notably in Saudi Arabia, that was built with low capital cost and is relatively easy to operate when needed.) Victor also notes that the experience in most gas markets is that prices follow oil—either by fiat (e.g., oil-indexed contracts) or de facto (e.g., due to substitution between gas and oil products such as residual fuel oil). Thus insofar as the goal with “gas security” is to dampen price swings then success with oil security will, in turn, have positive effects for gas.

The important issues for gas, argues Victor, concern investor confidence. Gas can help to promote diversity in fuels, and it has a special role to play in supplanting carbon-intensive coal for the generation of electric power. Yet the most important frontiers where investment in new electric power generating capacity is intense and coal is the incumbent—China, India and the United States—are all countries where gas resources that are readily at hand appear to be dwindling. For these and similarly situated nations, there has been a special wariness about dependence on imported gas. The issues are most striking in the market that is least well developed (China) and thus perhaps most vulnerable to supply interruptions. In China's case, the most interesting and attractive gas supply options are Russia—notably the huge Kovykta field near lake Baikal. Yet Russia's Gazprom wants to send that gas to the main Russian market in the West, and so far Gazprom has blocked the Kovykta project; China fears that if such a western export infrastructure were built that Kovykta supplies would not be secure for China. Similar issues arise in India, with pipelines from Iran, Bangladesh and Myanmar all technically feasible yet encountering substantial political obstacles (e.g., crossing Pakistan). For the U.S. the issues are different and relate to perceived insecurities in LNG supplies. For all these items, perhaps

the L20 could play a role. With China and Russia, or with India and her potential suppliers and transit countries, perhaps the L20 could help to provide an umbrella for these countries to reach agreements on security of supply. For all countries, perhaps the L20 could call for (and ensure the success of) efforts to ensure that LNG remains a safe and viable option. In the former, the L20's role would be as a political guarantor; in the latter it would use its convening power to ensure that a vital technology is nurtured.

### Nuclear: Taming Proliferation and Encouraging the Next Wave

Finally, Burt Richter looks at nuclear power. Richter notes that for large quantities of electric power generation—notably in the developing countries, which are likely to account for nearly all the incremental demand—the most abundant and least costly fuel is coal. The large-scale pollution consequences of a massive coal program have forced a rethinking and new embrace of nuclear as a largely pollution-free option for generating electricity. About three-quarters of the 440 existing reactors are in the OECD; many of the new reactors being built are in developing countries, most in Asia. Net growth in nuclear generation could be modest (e.g., 16%) or robust (60%), a range suggested by the IAEA that reflects uncertainties in cost, safety, political acceptability, waste handling, and other issues.

Richter suggests that there are enormous uncertainties surrounding the fuel cycle. Some of these are technical and relate to the relative merits of a “once-through” system (which generates much waste but has been a favorite of the U.S. because of its resistance to proliferation) and systems that involve varying types and degrees of fuel reprocessing. A robust future for nuclear power would seem to imply significant amounts of reprocessing, not least because a simple once-through cycle would generate unmanageable quantities of waste. Richter favors the French system for reprocessing, although there are other alternatives, and he notes that any scheme would involve working at scale with technologies that remain immature. Richter also notes that the dangers of proliferation arise not only with the “back end” of the fuel cycle (i.e., reprocessing and treatment of spent fuel) but also the “front end” (i.e., enrichment of raw uranium). Thus a system for supplying nuclear fuel implies intervention in the full fuel cycle. Richter notes that recent reports have found that once-through and many variants of reprocessing fuel cycles have similar scores in their vulnerability to proliferation, which suggests that regardless of the fuel cycle chosen a reinvigorated effort to manage proliferation is needed.

The L20 could play several roles here; Richter's analysis suggests three that our meeting should discuss. First, there may be a need for collective efforts to study and demonstrate key technologies needed for a proliferation-resistant fuel cycle. Indeed, there is a long history of cooperation on big technology programs—not only in nuclear power but also the Human Genome project, the space station, geophysical research, and other areas. Second, particular facilities may merit collective operation either because they are too expensive for one government to run on its own or because it would be unacceptable to some nations that just one (or a few) have full control over the critical equipment. Third, Richter gives particular attention to the growing interest in a truly international fuel cycle that would put key facilities into some form of international control. Such a system, if designed well, could help to reduce proliferation by hardening the fuel cycle against breaches and also increasing the odds that countries would rely on a superior international system rather than their own (probably proliferation-prone)

national systems. On all three of these fronts the L20's role could include the creation of a political framework needed for success as well as the establishment of funding mechanisms and oversight. Mindful of that potential, however, many countries are also pursuing their own fuel cycles, and in a few cases the existing IAEA safeguards against proliferation from those fuel systems have already proved inadequate, and thus any effort by L20 to become involved in such issues must contend with both their political difficulty and the already existing array of international arrangements, including bilateral technology sharing programs and notably the IAEA's multilateral program.

### WHAT IS MISSING?

These five papers and our agenda are far from a comprehensive treatment of the issues. We have focused on oil because of its central importance and considered other elements that are critically important and also allow for a more diverse analysis of possible roles for the L20. Nonetheless, we have left many stones unturned. Among them are possibly aggressive programs to improve investment in energy conservation and collective efforts to boost renewable energy sources. Nor have we considered the many intriguing options for advanced coal combustion.

In an effort to draw attention to elements that may be missing from our deliberation, we offer a simple listing of some possible actions that the L20 could take in relation to energy security—beyond the items discussed in more detail above and in the five other background papers:

- Expand the Bio-energy and the Renewable Energy and Energy Efficiency Partnerships and encourage the World Bank and the financial industry to devise ways to reduce the cost of financing renewable energy investments
- Instruct Trade Ministers to work together within the Doha trade round to replace food production subsidies with incentives for farmers to grow environmentally beneficial bio fuel crops;
- Ask the World Bank, WTO and the OECD to develop incentives, policies and programs to give priority to overcoming barriers to clean energy. Make Gleneagles' call for voluntary energy savings assessments mandatory;
- Evaluate the feasibility of quantitative bio fuel standards and targets for transportation;
- Instruct Finance Ministers, with the assistance of the IMF, to introduce, as appropriate, fiscally neutral GHG taxes, to be harmonized with the design of an internationally agreed tradable permit framework. Countries could retain the option of a "safety-valve system", that is, national tradable permit systems with government promise to sales of additional permits at a stated price (and thereby cost) ceiling. Taxes can have a powerful effect on emissions;
- Pursuant to Gleneagles' encouragement of co-ordination of international policies on labelling, standard setting and testing procedures for energy efficiency appliances, phase in global efficiency standards; apply the same approach to automobiles;
- Coordinate the provision of tax credit schemes and other incentives for technologies that exceed standards (including automobile manufacturing industry);
- Implore member nations to fund incentives by redirecting fossil fuel subsidies;

- Coordinate the creation of greater economies of scale through mass support for marketable or near market technologies such as hybrid or hydrogen vehicles.

We include this list not as an endorsement of its elements but as a reminder of the wider array of items that could be included in a package that the L20 could craft. By the end of our meeting we aim to have identified some of the main elements of such a package, along with an agenda for the L20 session itself.

### **QUESTIONS TO CONSIDER**

We close with two broad questions that will help to focus our deliberations over the two days of the meeting.

First, if there is an L20 meeting with energy security on the agenda, what would be a pragmatic substantive outcome? What decisions at the leaders' level will yield benefits for large, important developing and industrialized countries—such that leaders will be willing to back them at L20 and beyond? What elements relate to short-term aspects of energy security and which require a longer term perspective?

Second, how would advocates for the L20 get there from here? In particular:

- What are the specific decisions and actions implied in each of the background papers, and which packages of actions are likely to be most attractive?
- What message or series of events would entice key countries—notably the United States, the EU and China—to embrace energy security as a subject for L20 attention?
- How do we catalyze support from civil society, including business?