Deregulation of Electricity Markets: An American Perspective

Discussion Forum at the Liberální Institut

August 7th, 1997

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Editor: Libor Dušek

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Introduction

(by Libor Dušek)

In early 1997, the Liberální Institut kicked off a new public policy research project entitled "Competition – the Road to Efficient Production and Consumption of Electricity." Our goal is to spread the idea of a competitive electricity market through Czech society and to present a comprehensive proposal for deregulation of the electricity industry. The electricity industry is in a great need of radical reform. Currently, political calculations, rather than economic calculations, determine prices and production. Low residential prices are popular, but cost millions to our industries that have to provide the cross subsidy. Public, or partially public ownership does not give the energy suppliers a strong incentive to operate efficiently.

We believe that competitive market will provide a solution to these problems. Some countries have already shown that, despite all the "natural monopoly" rhetoric, a competitive market in electricity can work, and can work well. There is a lot to learn from the experience of these countries. Studying their mistakes and successes with energy deregulation can save us a lot of time and money when we actually start to think about deregulation.

One of the best lessons is provided by the United States. America has been a textbook example of a well-regulated electrical industry for almost a century. Investor-owned utilities were given exclusive franchises carrying a monopoly right to generation and distribution of electricity in a particular territory. Their prices and investments were regulated by Public Utilities Commissions at the state level. In addition to huge administrative costs, the regulatory system dulled incentives to minimize costs and encouraged excessive and costly investments. Its "democratic" structure was subject to misuse in favor of special interest groups. As a result, electricity prices rose slowly, but surely.

Economists know that inefficient institutions cannot not survive. Regulation is no exception. As an unexpected result of a law passed in 1978 (originally intended to encourage the development of alternative energy sources), a number of independent power producers emerged and offered an alternative to the investor-owned utilities. Growing interconnection between individual utilities opened a way for a nation-wide wholesale market, where competition held prices low. Finally, the consumers stepped in, eager to get the benefits of competition for themselves and to be able to choose among alternative suppliers. Some states (especially the states with highest electricity prices – California, Massachusetts, New York, New Hampshire, Pennsylvania) have adopted deregulatory plans that allow consumers to choose who they buy power from and at what price.

There is a unanimous agreement that competition will bring lower prices. While the average price is now around 7 cents per kilowatt-hour (and around 10 cents in California), the competitive market is expected to reduce this figure to about 5 cents per kilowatt-hour. However, this does not make the transition from the old to the new system easier. Quite the contrary, the fall in prices puts the least efficient incumbent monopolies into a real danger of bankruptcy. A new term has been invented, "stranded costs," which refers to bad old investments that will not be viable on the competitive marketplace. By asking for guarantees to retrieve the stranded costs and by bringing legal challenges against deregulatory efforts, the monopolies were quite effective in delaying the process. However, they had no chance to stop it completely as the benefits to consumers were too inticing.

The Liberální Institut was pleased to organize a discussion with Michael K. Block (University of Arizona) and Tom Broderick (Pacific Gas and Electric Co.), each of whom has hands-on experience with deregulation in the United States. I hope that their input regarding the American deregulation will serve as a source of knowledge and inspiration for everyone who wants to contribute to successful deregulation in the Czech Republic.

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Jiří Schwarz: Good afternoon, ladies and gentlemen, and welcome to the Liberální Institut's discussion forum. It is a pleasure for me to introduce to you two prominent personalities in deregulation activities in the United States, Dr. Michael Block and Mr. Tom Broderick. I am also pleased to introduce to you our former colleague, Ms. Olga Výborná, who is now the wife of Mr. Block, so her new name is actually Olga Block. She was a vice dean at the Faculty of Social Sciences at the Charles University and one of our first speakers at these discussion forums. It was three years ago when we discussed with her the issue of the social security net and pension funds. Since that time, she has become a resident of the United States more than of the Czech Republic.

Michael Block: To our gain.

Jiří Schwarz: That is right, and to our loss. Before introducing our two key speakers, let me inform you of the various research projects currently underway at the Liberální Institut. About a year ago, it was Olga's idea to become more involved in the regulation and deregulation business in the Czech Republic. We started our electricity deregulation project, which is headed by Libor Dušek, a Research Fellow at the Liberální Institut. He gained a great deal of experience in this area in the United States while at the Progress and Freedom Foundation, where he worked with Dr. Block. In addition to deregulation of the energy market, our areas of involvement in deregulation activities include the "Deregulation of the Railway System in the Czech Republic" project (in which we support Mr. Michal Tošovský in his efforts at the Ministry of Transportation), and the regulation and deregulation of capital markets. Other interesting projects addressed by the Liberální Institut include "Pension Funds and the System of Pension Insurance," headed by Ondřej Schneider, and "Macroeconomic Analysis in Relation to the Construction of the Index of Economic Freedom." These are the main research fields of the Liberální Institut.

At this time, I would like to introduce our speakers. Michael Block's research interest is focused on economic theory of criminal law and economics of regulation and competition policy. In the area of economics and crime, Michael spend some time working with Gary Becker, the author of Accounting for Tastes, the last book put out by the Liberální Institut. Michael's thoughts are similar to those of Gary Becker and in fact, we would not have invited him here if his views differed too drastically. In the 1980's he worked for the Reagan Administration as a Consultant to the Executive Office of the President and a Commissioner of the U.S. Sentencing Commission. Currently, he is a professor of Law and Economics at the University of Arizona, President of the Goldwater Institute, and an Advisor to the Governor of Arizona. I think as the President of the Goldwater Institute, we can be quite confident of his free-market approach. In the 1990's he was a lecturer for the Economic Development Institute of the World Bank at seminars in Central Europe. From 1995 through 1997, he was a Senior Fellow at the Progress and Freedom Foundation in Washington, and

as I mentioned, he cooperated with Libor Dušek while leading their project on electricity deregulation. Inspired by his Central European experience, he developed a plan to privatize electricity companies in the United States by distributing vouchers to the consumers, again a concept very familiar to us.

Let me also introduce our first speaker, Tom Broderick, who is a regulatory consultant. It is safe to assume that he is very good at what he does since one of his major clients is the Pacific Gas and Electric Company, the largest electricity company in the United States with annual revenue of 10 billion dollars. Formerly he worked for the Arizona Public Service Company (from 1984 to 1996) as a planning manager. Tom is an economist by education. So Tom, please take the floor.

Tom Broderick: Thank you and good afternoon. I am very pleased to see so many people here on such a sunny day. I am from the desert southwest where the sun shines all the time, so we actually go outside on the cloudy days. As my introduction indicated, it is only in the past year that I left the Arizona Public Service Company and joined up with the Pacific Gas and Electric Company in California. The reason is that it is an incredible opportunity to work on the efforts to bring about competition. As most of you know, California has been a leading state in the United States on competition, completing its initial concepts in 1995 and late 1996. Then the California utilities turned their attention to neighboring states, in pursuit of further market opportunities. What I do is represent that very large company, based in San Francisco, in the states of Arizona, New Mexico, Utah, and Nevada. My job is to influence the outcome of deregulation in those states in a manner that is favorable to my client as well as to create a goodwill among future customers.

I am a veteran of numerous traditional rate cases in the United States, particularly involving the Palo Verde nuclear generating station. Nuclear plants have presented very significant regulatory challenges. If we talk about restructuring in the U.S., we have to realize that, of course, there are fifty states and approximately forty of those states have passed or are considering passing electricity restructuring rules. This is different from other deregulated industries in the sense that it requires state action because the historical evolution is such that the states have the authority over the vast majority of electricity services. For instance, in California restructuring required decisions by the California regulatory commission and then, secondarily, by the California legislature. Although the California legislation covered many, many aspects, essentially the purpose was to bind future commissions on stranded cost recovery for the California utilities.

Nevada, on the other hand, has had no decision by its regulatory body. Rather, the state legislature has acted and passed laws. In Arizona, the regulatory commission has very strong authority and has made decisions. These decisions, however, are being legally challenged by the utilities who want to overturn the new decisions. What a surprise that the incumbent monopolies don't want to compete!

There is also a role for federal bodies, which Michael Block will talk about. I do want to mention that when these states restructure, they do require some decisions from Washington, DC. For instance, the federal regulators will take over the regulation of transmission services upon separation of those services. The whole issue id extremely complex and time consuming.

The most activity is on the East and West Coasts; New York, New Hampshire, Massachusetts, Pennsylvania, California, and Arizona. This is due mainly to higher prices in these areas. For instance, the residential (perhaps you call them domestic) prices are

between 9 and 14 cents per kilowatt-hour in those areas. That might be three to four times what your residential prices are here. Now in all of these cases, in all of the states that I am involved, there are many interested parties to the deregulation process. It is a wonderful time for lawyers, economists, and engineers like myself. The existing utilities have representatives, large customers have representatives, consumers with low incomes have representatives, environmentalist, and of course new entrants have representatives like me. This process can be frustrating for each of these states because there is no national blueprint, there is no model to import, no model to copy. There is also a great deal of rivalry between state plans. It is just now that we in Arizona are starting to warm up to a number of the concepts originating in California. What is required in these states is first, a great deal of education, and second, time to study and to figure out what is best.

In these states, what we are mostly talking about is deregulating generation supply and allowing competition for customer services such as meter installation, meter reading, and billing. Of course, there is hope that there will be many other innovations down the line, but for the present time, there is little public discussion in these small states (such as Arizona and New Mexico) about the deregulation of distribution or transmission. However in Arizona, the original proposal of the new rules did include competition for distribution services. The existing monopolies immediately went mildly insane over that. They were very upset, and quickly defeated that proposal. The proponents of competition in the delivery service had not organized their concepts and were not prepared to respond at that time.

The states around California are now very much under pressure. California allows choice for all retail customers in 1998, which I believe is the same timetable as Britain. Arizona begins competition for 20 percent of retail customers in 1999, and an additional 20 percent in the year 2001, and so forth. Arizona's program is slower. In New Mexico, they have not reached a decision yet. But California is an enormous state. Just to give you some perspective: it is 32 million people, while Arizona is perhaps 5 million people and New Mexico is perhaps 2 million people. So what is happening is that the decisions in California are influencing and putting pressure on Arizona. For instance, Arizona is under pressure to not stagger choice, but to bring it all up to 100 percent in say 1999 or possibly 1998. In California they have reached an agreement to recover (virtually) all stranded costs by the year 2002, in approximately four or five years. On the other hand, in New Mexico the monopolist company wants 20 years to recover their stranded costs. Immediately, the company in New Mexico knows they have a problem with their customers to have to recover costs over twenty years. California has agreed to recover these costs without any increases in prices during that period of time. Yes, Michael?

Michael Block: The stranded costs are an artifact that the investor-owned utilities like to talk about. This is an impartial world without investor-owned utilities, so it might be useful to explain the stranded costs.

Tom Broderick: True. We will look at how the mathematics work. Stranded costs are those costs that the existing utilities indicate they will not be able to recover once competition begins. In other words, their current costs exceed the estimates of market revenues by some amount. For instance, in California that amount is believed to be about 3 cents per kilowatt-hour. For a residential customer paying perhaps 11 cents per kilowatt-hour, they think the market price is about 8 cents per kilowatt-hour, so the 3 cents difference is the current utility's stranded costs. The utilities believe they have the right to recover those costs, a promise made by regulators. We could spend a great deal of time on this topic because it is the number one topic in the United States. The second topic is the benefits to

residential consumers, and the third most controversial topic is solutions to market power. But let us focus on stranded costs. The California utilities will recover these costs until the year 2002, then it expires. If those utilities have not recovered enough of their costs, their investors and shareholders must absorb the loss.

Now there is an emerging belief that stranded costs are much, much less than believed just one year ago. Some of this is due to data from power plant sales. Some companies, like my client in San Francisco, are selling power plants. They are selling generation supply to address concerns of market power. Prices paid for these power plants are higher than originally believed. Originally, it was believed that if many plants were sold there would be, what we call in the United States, a fire sale, and the prices would be depressed. What actually seems to be happening is that new marketing entrants see acquisitions of power plants as a great opportunity to serve new territories.

Michael Block: Let us put some scale on the stranded investment. I think it is an issue that is not appreciated outside of the United States, but when the deregulatory debate started the stranded investment numbers were in the order of 200 billion dollars. I was just talking to Jiří about what the GDP in the Czech Republic is, and it is about 48 billion dollars. So the stranded investment in these utilities in the United States is about four times more than the entire GDP of the Czech Republic. Later, I want to talk little bit about stranded benefits in Europe as opposed to the stranded investment in the United States because I think there is a definite parallel. Stranded investment really originates with our regulatory procedure, which I think is a red light about why not to copy the American style, and to some extent the British style, regulation. The reason why we have stranded investments (or claim to have stranded investments) of this magnitude is a cost-plus regulatory system, which is essentially the way the regulatory system worked. The utilities invested in these assets which regulators approved. They said the investment was prudent and wise, and that there was some guarantee that they would actually get that investment back, plus a rate of return because the share prices were based on that. Now the utilities are complaining that the rules of the game are being changed. Even though they have invested ten billion dollars in a nuclear plant, while the market price might only be a billion dollars (if they are lucky), they feel they are still entitled to the nine billion dollar recovery. They claim that they are entitled to the difference between what the plant is worth on the market and what they have invested in it. That is the stranded cost, and the origin of stranded cost really comes from our regulatory system. It is a *huge red light* for you if you are thinking about regulatory reform and about ever getting involved in this cost-of-service regulation. The United States has most of it, almost any place that imposes regulations has some form if it.

Tom Broderick: One of the first changes in the U.S. that began to frustrate the practices of the utilities to invest in highly capital intensive projects was the trend towards independent supply, or independent procurement, that started in the 1980's. In other words, the existing suppliers had to procure and purchase from other suppliers as opposed to building and owning generation themselves. When they purchased, they did not put those costs in their rate base to earn a profit on that. Purchased power was a pass-through and so the profit was added to the cost of the independent supplier. Some utilities in the 1980's began to see where this was headed and were beginning to see that profit potential from traditional practices was changing.

Now why is it that California is so important to these other states? Well, it is the dominant state in the region. For instance, approximately 50,000 people move every year from California to Arizona, and there is a concern that in 1998 when Californians will begin to have

choices, they would lose those choices if they move to states like Arizona. That is something that Americans do not like. They do not like giving up their freedoms. Hence, the utility companies in places like Arizona worry about these kinds of things. Economic development interests are very, very powerful in these states. Potential developers can capture tax concessions or get discounts for properties by indicating that they are willing to build a new plant. Say Intel, the world's largest producer of computer chips, has just moved into New Mexico and obtained a lot of concessions. These huge companies are very sophisticated in using arguments in different states like: "You know, we have this benefit in California, why can't we have this benefit in Nevada? Or, we get this benefit in Utah and we would like to expand it here, and if we do not get these benefits we will expand somewhere other than your location." This kind of argument makes a lot of sense to politicians because economic development concerns are important to them. The industries that are most intense electrically, like mining, paper, irrigation pumps, and office buildings (because of the tremendous air conditioning requirements in the Southwest), are now pushing very hard in all of these states to get the benefits of cheap, competitively supplied electricity.

Near the end I would like to just leave you with some thoughts and hopefully inspire some questions. I think there are a number of upsides to competition among these utilities. First of all, many of the costs that are stranded have been a problem for one or two decades. Many utilities that own, for instance, nuclear plants anticipated that nuclear plants would continue to be a problem for another ten to twenty years. For them, stranded cost recovery represents an opportunity to improve their financial situation dramatically, to recover those assets once and for all and to improve their balance sheets. For instance, if you are a utility in the U.S. and you own a nuclear plant, your stockholder value is automatically lower than a company that does not own a nuclear plant. Statistical analysis can demonstrate that fact. Another upside for these utilities is that many of them have already had four to five years to prepare their employees for the future, to transition their corporate culture from a quasi-governmental mentality to a private sector mentality. They have had a long time to prepare their employees and give them the right kind of training. A few years ago, if you called up your electric utility, your telephone would be put on hold, the person on the other end might be rude to you, and they simply would not care. Today, it is a whole different situation. If you have some construction in your neighborhood they are much more sympathetic to your demands as a customer. For these utilities it has been an opportunity to "hammer suppliers," to get concessions out of suppliers. You go to coal mines, you go to the labor unions, you go to all your suppliers and you indicate that the future is going to be very hard for you and that the suppliers need to give you a concession. As a result of the threat of competition, many of these utilities are very, very profitable – more profitable now than they have ever been.

Many companies like the one I represent are very much looking forward to new marketing opportunities by selling services separately, since that also represents the opportunity to make more money. For example, my client has just purchased a supplier of generation and they are looking forward to directly marketing that generation to customers. It is a real opportunity to reduce regulation. In the past, the utilities have had their upside limited. If they made a good decision the reward was taken away from them. So these utilities are looking forward to having the benefits of good decisions by their management passed through to their investors. I think that probably is a good point to end on, so I will turn it back to the moderator.

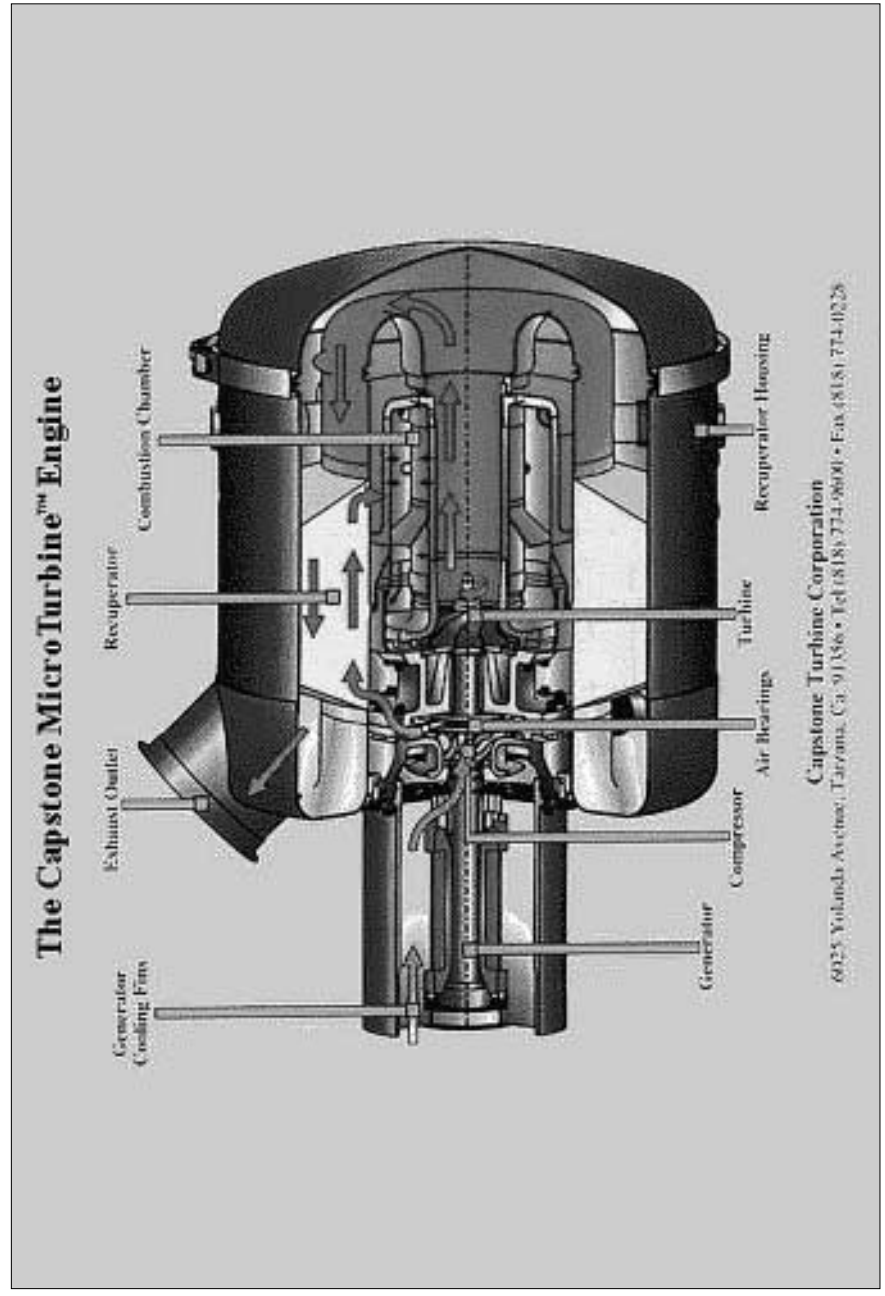
Jiří Schwarz: Thank you very much for your presentation. I would now like to ask Mr. Block to present his ideas.

Michael Block: Thank you very much. At the beginning, let me say a few words to further put this discussion in context about the American regulatory system. I will take only two minutes to describe what I think may be, at least for you, very confusing, and that is the federal system that we live in. The federal government has given up regulation at the federal level, theoretically dealing with electricity transactions between states. In practice, this means a lot more regulation than there would be at the federal government level. This draws from an idea that the transactions between states would be regulated by the federal government. In practice, what that has come down to is that wholesale transactions, transactions between the utilities, are regulated at the federal level, even though they do not cross state borders. And so is the transmission of electricity also regulated at the federal level, at least currently. At the local level, retail rates (the sales from utilities to their customers) are regulated, as is distribution. Most of Tom's comments dealt with the states' role, which is really a central role in regulation because these various states regulate their local distribution and sales of electricity. From the fifty states, one state actually has all public power; the state of Nebraska has no private utilities. Just to give you some perspective on the structure of the industry, over the whole United States about 70 percent of the installed capacity is investor-owned (i.e., private), and 30 percent is public, of which about third is federal and the rest is some mixture of state and local. Some institutions in the United States resemble the German municipal utilities and some are actually state-owned utilities, but I will leave this issue for the question and answer session.

I want to focus on federal regulation and what the federal government can do to promote competition in the states. When Libor and I were working in Washington together, he helped write a report at the Progress and Freedom Foundation that dealt with bringing competition to customers in the United States, focusing on what the federal government could do. We came up with a ten point program that I would like to outline for you. As I go through the ten points, I promise to spend time only on few of those points, and I will mention the others just to complete the list.

But before I do that I want to put up a picture of what we think a new federal regulator looks like. [See Picture.] I want to put up a picture of the newest in gas turbine technology and I want to say a few things about it. My view of the world is that reality should dictate. So in terms of how the government should react, I think when technology can be used to discipline markets, it, instead of government, ought to be used to discipline markets. The stranded investment problem that we have in the United States should be a warning for the rest of the world not to even *think* about adopting our type of regulation. It also serves as a warning about regulation in general. I am not sure that you can ever get away from the problems that we have encountered in regulation. You may find a slightly better mousetrap, the British have a slightly better mousetrap in their price-cap regulation, but if you dig deep enough, you find that price-cap regulation will eventually come down to some of the same problems as our cost-of-service regulation.

Why is this technology a regulator? This is a picture of what the company quite modestly calls the Capstone Turbo Generator. Capstone is a small start-up company in California. This little company has been developing a turbo generator. The generator is a about half the size of these desks and could easily fit into a house. It is a thirty kilowatt (30 kW) generator. Usually, those of you in the electric industry are used to measuring in megawatts, or millions of watts, and this is measured in thousands of watts,. A big air-conditioner in



some of the big Southwestern houses will take 30 kW at peak load. This could easily supply a single house wired together with other houses so that they form a low-voltage network. This is probably the coming technology in large parts of the United States, and I would argue that it is probably the coming technology in large parts of the world. For instance, these companies are really gearing up to put this technology in China because there is a large market for new generation. I also think all of us in the other parts of the world would benefit if these companies work to put this technology in China. This one happens to be run on natural gas but you can burn anything in these turbines, from garbage to natural gas. They are cleaner and nicer if you burn natural gas.

This really is a great technology. I took a field trip to their factory and it was really a great experience. It is a little factory, about the size of the Liberální Institut's offices, where they are putting these things together in a sort of medieval setting. They are making them in very low volume, but when they ever get to mass production techniques these could be very cheap. The technology really comes from the turbo chargers that are in automobiles. I do not know how many of you drive turbo charged cars, but turbo chargers required a huge investment to actually develop and the payoff for that is now in these little turbo generators. Essentially, those little turbo compressors in funny cars have been turned into turbo generators.

This generator has only one moving part – the turbine. It has air bearings that run five years, solid! (Now it sounds like I'm selling Capstone). They actually do not know how long they run, but they say that they run five years because they are five years old, and they just run them constant. It runs on a special air bearing which is just a little piece of silver that sends the air in the right direction so that the turbo shaft is completely supported by air, which means there is no need for moving parts. Right now, Allied Signal, which is a pretty large company, has a version of this. Their turbine is little larger (50 kilowatts), and the installed capacity price is about 250 dollars a kilowatt. This compares to about 500 in a normal combined-cycle gas plant, about 2800 in hydro plants, or a thousand in nuclear. So this is really very cheap capital, and it is not even mass-produced yet! Once it is mass-produced, it should be cheap; it should be like putting a heating unit in a house. That is why I see this as the ultimate regulator of the grid, and that is why I am going to talk about getting the government out of regulating the grid completely and letting these technologies work to put discipline in the system.

Let me present some numbers that were given to me by Allied Signal. The variable power cost per kilowatt-hour of generating electricity by burning natural gas in their micro turbine is mere 3.5 cents per kilowatt-hour in the United States. But what is more relevant to you is the cost of generating in Germany – 5 cents per kilowatt-hour. The grid price in Germany, on the other hand, is 13 cents. So it is about an 8 cent per kilowatt-hour difference between the grid price in Germany and what these turbo generators can actually produce at variable cost. I did a back-of-the-envelope calculation, and found that it takes about 200,000 kilowatt-hours to break even at the current prices. (The turbines cost 15,000 dollars now, hence over a five year life you need about 40,000 kilowatt-hours a year to break even. Or in other words, you have to use the turbine about 30 percent of the time to break even.) But I have to emphasize that this is hand-crafted. When they start to produce them in large numbers, then the break even should be fairly small.

You also ought to be able to wire these together. In California (where all the innovations happen), they are now shipping these in so called "six-packs." We usually refer to six-packs as six-packs of beer. The people in Capstone, however, refer to six-packs as six turbo

generators. They ship out a six-pack of turbo generators to a supermarket. The supermarket may never need all six, it may use three, but essentially they have reliability and peaking power out of the six. It really is an emerging technological that once you can get to these low-cost figures, the whole process is unstoppable.

The turbines really make the natural gas pipelines in the United States the direct competitors to the electric grid. Most of the United States, except the really mountainous regions, are all served with natural gas. So the natural gas pipeline really is a natural competitor to the grid.

Tom Broderick: Michael, does Capstone believe that with this turbo generation you can completely bypass the electric system, that you need no back-up or other ancillary services, that is, you can be totally disconnected?

Michael Block: They claim that they could actually put a six-pack of these in, say, an apartment house and no one would ever have to worry about back-up. Essentially, it is more reliable to have six little units than to have a few big units, which is the way we have been doing generation for many years. So, they think that you could totally bypass the whole grid with their turbines.

This is really an ultimate disciplining force. In some sense, when you see the production costs of these turbo generators you see the horizon where prices can be when you open up the market. The cost is so low that the markets really cannot get very far out. Just compare the price of commercial interruptible power (in some places in the United States, you can now buy interruptible commercial power, which means you can get interrupted but receive a price discount) in Torrance, California, which is where Allied Signal has its headquarters: The price is 7 cents per kWh as opposed to the 3.5 cents per kWh which is the cost of power produced by the turbo generators. This looks like you break even in two years. Allied Signal sees this difference as extremely attractive for the 50 kilowatt and up commercial customers. The clients that are most likely to benefit from turbo generators are, for example, K-mart, a retail chain that you used to have at some point, Safeway, which is a supermarket chain, and McDonald's, which everyone knows. McDonald's uses 130 kW, and so a six-pack is plenty for them. Judging by the cost of capital for most activities, this is actually a fairy low level of consumption. At this point I will end my preliminary lecture on technology and sales ads for Capstone and Allied Signal, and when you leave I will take orders from you for turbo generators.

I would like to use this technology lecture to put some perspective on something that may appear to you as really an outrageous suggestion and that is the Progress and Freedom Foundation approach to deregulation in the United States. As I go through the ten points you will see how outrageous it is.

The first point is not too outrageous, and probably has no parallel here, and that is to repeal outmoded and ill-conceived legislation. We have a couple of silly laws in the United States that constrain electric power, and our suggestions are to repeal them. I think that the details are probably uninteresting to you.

Number two is probably of some interest in the Czech Republic. We would suggest that the U.S. government privatize all federal public power. About 10 percent of all U.S. power is publicly produced. There are so called Power Marketing Administrations that produce power or buy power from the federal dam projects, and then sell it. That is a small percentage, but the federal government does own the largest power producer in the United States. I am not proud of that, but it is a fact. It is called the Tennessee Valley Authority.

Our recommendation is to get the federal government out of this business, and in particular, get the federal government out of the business of subsidizing the interest rates for all public power, which they do. It probably has some parallel here since I believe that about 66 percent of ČEZ is owned by the government.

Point number three: Allow market-based generation pricing. The Federal Energy Regulatory Commission (or FERC, since we use acronyms for everything) traditionally regulated generation prices for trades between utilities. As the market became deregulated and national in scope that regulation becomes superfluous. But FERC still claims that they have to regulate because there are places where some utilities possess market power. However, you cannot really have a competitive market without market-based generation pricing. We think that FERC should have the duty of showing there is any market power before they undertake any regulation. The burden should be the other way around. Right now, you could use market-based rates if you come and convince the federal authorities that there is no market power. Our suggestion is to reverse what we in the American legal system call the burden of proof. Change the burden so the federal regulators have to prove there is market power before they can regulate.

Point four I think really is our most important point: Allow free entry to the market. If you took economics courses recently you know that we economists think free entry solves everything. And in this area it solves a lot. It is a very touchy business in the United States since this would mean that the federal government should order the states to eliminate all exclusive sales territories. The way the electric regulation is done now is that the states, like California or Arizona, give out exclusive territorial grants to private companies and then they regulate those private companies. Our suggestion is to forbid the states from doing that. Of course the states, and then the regulators, the association of regulators, all with vested interest in state regulation, jump up and down saying, "Wow, this is a federal union and you can't do that since you can't coerce the states!" Everyone forgets that one of the main pillars of the idea of the United States is a free market! The European Union was not the first institution with the idea of unifying states without tariffs. Essentially, the idea of the United States Constitution was not to have any barriers between the states in terms of trade. So our argument about electricity is that the states should not be able to erect artificial barriers to electrons. The whole grid in the United States is interconnected, so we would outlaw any exclusive sales territories. I do not know the particular situation in the Czech Republic, do you have exclusive sales territories?

Libor Dušek: Of course we do.

Michael Block: Right, most places have that. We would suggest that you completely eliminate them. If some people want to put up microgrids, let them put up microgrids. The population of the United States is not growing a great deal, but there are some states that are growing fast, like Arizona. When people put up housing developments (i.e., a couple of hundred houses at one time) they cannot establish their own microgrid at the outset. The developer would still have to have the licensed public utility in that area serve those new houses. Our argument is to get a rid of that completely. Let anyone enter that area. My feeling is that competition in building local grids will essentially take care of regulation after that. We should also allow free entry to transmission. You want to build a transmission line? It is actually pretty hard to do that in the United States these days because the variance of greens that we have makes it almost impossible. But if you want to build a transmission line and you can get the permission, go and build it as long as it is technically compatible.

Point five: Adopt market-based transmission pricing. Forget about regulating transmission prices. Let the turbo generators regulate the transmission prices. If you have a contestable market, if you have a technology that can enter at very close to the existing prices, there is nothing you need to be worried about. Just allow market-based pricing for transmission.

Point six: To soften our approach, and make it politically palatable, we would suggest to have a transitional residential price ceiling. That is, for three to five years after adopting this radical approach, the prices would be limited to their historical rate of increase. You simply look at the last five or six years, and say that the rate of increase was two percent a year. That is what prices could do for the next three or four years. It is not really greatly different than RPI-X, so it is a sort of crude version of price-capping. To put it in a politically incorrect way, give Congress price-capping power for two, three, or four years if that makes people happy. That will also give you some transition time for competitive arrangements to be put in play. Finally, another softening feature to our approach: have a regulatory fallback.

Let me go over the fallback mechanism, because it does sort of reflect our skepticism about regulation. The fallback is to allow some remedy in the case that you find, after the three to four year period, that you have pockets of market power. If you have so-called pockets of market power, we suggest a two-part approach. First, the burden should be on the customers to prove that the prices locally are above some benchmark price. Since it is not so easy to estimate what the price in surrounding areas is, have the customers do that, to actually estimate what the benchmark is. Then the customers need to establish that not only is the price above the benchmark but that there is insufficient actual or potential competition in the area. So there are two requirements that the customers would have to meet: Is the price higher than benchmark? It is not enough that it is just high, as prices are high in some places because the costs are high. So the question is, is it higher than you would predict based on the costs, and if it is higher, is there insufficient actual or potential competition? If the two criteria hold, than have the Federal Energy Regulatory Commission (which we hope would be nearly unemployed at this time) come in and first try a structural remedy. First try to desegregate the companies in the area, separate transmission and distribution if you have to. If the structural remedy does not work, then fall back on regulation. We think that the last stop on this long road should be regulation. We know of some pockets of market power, or places where natural gas cannot reach, and so you ought to look at those areas but not automatically assume that they have market power there, because there are lots of areas where you have multiple ways to get into the area. Generally, regulation is so destructive that one of the heroes of the Liberální Institut, Milton Friedman, remarked when I was an undergraduate (and that was a long time ago) that often times you are better off with an unregulated monopoly than a regulated monopoly. Best is competition, but worst, on his scale, was regulated monopoly. So, it may be that even a little bit of raw monopoly is better than regulation.

I will go quickly through numbers eight, nine, and ten. Eight concerns stranded costs. I already talked a little bit about stranded costs and tried to define them, but it probably did not make sense to you because it does not make sense to most people. I think there is an analogue here, as in most places where there is a publicly owned power, and that is *stranded benefits*. Whoever loses by going to competition, there is a stranded cost or a stranded benefit. Whatever theory you put around it, there really are losers when you get to competition, or at least some people think they are going to lose. In the Czech Republic, I suspect it is residential consumers who pay much less than industrial. In the United States

the average industrial pays 5 cents per kilowatt-hour, the average commercial pays about 7, and the average residential 8 or 9. My understanding is that it is upside down in this country. So, there are likely to be stranded benefits at the residential side. In the same way that we cannot move in the United States until the stockholders are paid off, you are probably not going to be able to move until the *voters* are paid off. That is just the way democracies essentially work. When you create an interest group you must deal with it.

We do not really take a position on stranded investment recovery. We do not know whether you should or should not pay those. As a practical matter, however, competition is no going to come to the United States until you do something about stranded costs. Our point was two-fold: Try to measure it using market valuations, which is probably more important in the stranded investment and not so important in stranded benefits, and try to recover it in the way that is least distortionary. The conventional wisdom in the United States is that you ought to recover these stranded costs by putting a per kilowatt-hour charge on a line. If the actual cost of power with delivery is five cents a kilowatt-hour, and stranded cost comes out to be two cents, add the two cents. I come to the view that we should not do that. You should essentially try to recover it by a fixed charge. I do not know if this is politically possible, but we have something called meter charges. You probably have some sort of a minimum charge which is virtually comparable. Try to recover it using fixed charges rather than variable charges, because fixed charges do not distort the consumption and production decisions while per kilowatt-hour charges do.

Point nine concerns social goals, whatever they may mean. For example, we have a universal service requirement. Somehow we have an idea that in this cowboy capitalism that we live under in the United States, if you live a long way from everyone else you have an absolute right to power, and all of us who do not live that far out have to pay for it. That is called universal service. Our suggestion is that if you want to give people universal service, charge those non-universal customers among us explicitly for it. Put an item on the bill called “donation to your neighbor,” or euphemistically “universal service charge.” Or another example, again in this home of cowboy capitalism, we have always worried about low income consumers. If you are worried about low income consumers, put “low income consumers” on the bill, with a specified dollar amount going to low income consumers. What we do now is play what we call “hide the ball.” The Czech Republic does the same with residential consumers, and continues to do it on its own regulated form. Regulators love that, politicians love that. You benefit people and you hide the costs. So, you can benefit low income consumers and you hide it in averaging it in the costs to everyone else. Our argument is that if you want to help people, put it on the bill. Of course we think there will be less help that way, but in any case, you should have it on the bill.

Another social goal concerns green power, greenhouse gases and all those horrible things that we in the high income countries are doing to the rest of the world. I think there is probably not enough consensus on whether in fact greenhouse gases matter but a lot of people think that they do. What we would suggest as a solution is a green power market. If you think that consuming non-fossil fuels is good for the environment, consume them. Hence you can run two markets at once. Technically it is possible. Now the big firms in the United States, like Enron, which is (I would guess) the world’s largest energy company, is buying windmill farms (our pejorative term for windmills) and geothermal plants because they are going to market green power. Even though you cannot tell whose electron goes where, you can essentially buy green power and inject that into the grid and that displaces non-renewable power. That was essentially our suggestion, go to it, establish a green market.

Finally, point ten, tying it back to California, the federal government probably ought to grandfather in all the existing deregulation plans in the various states as long as they do not contribute to the reduction in trade between the states. I think I have burdened you for enough and I will turn it over to Jiří.

Jiří Schwarz: Thank you very much to both of our speakers. I would now like to invite our audience to make comments or ask questions. I ask, however, that you please identify yourself when doing so. We would like to publish our discussion here, so it is important that you get your name and the name of the company or institution that you are associated with. While you think about the questions, Mr. Dušek, who worked with Mr. Block, will make a few comments.

Libor Dušek: Thank you. First, a little bit of advertising. The proposal that Michael was explaining, which we came up with in Progress and Freedom Foundation, is summed up in a paper which is available for you at the Liberální Institut. To get to the real content, I cannot resist comparing the regulatory system that we have here in the Czech Republic with the one the United States is just abandoning. Here, a lot of people say that we do not have regulation, but they mean that we do not have these precise, detailed rules and procedures that are typical to the American system. You have to realize that regulation is actually anything that the government does to interfere with the operation of free markets. The Czech government sets the prices of electricity. Even though it does not calculate them by a pre-specified formula (or calculates them by a formula that nobody knows), the outcome is that prices have eventually nothing to do with costs, forcing some people to pay high prices that subsidize low prices for other people. Even though the regulatory systems are completely different, the utilities in fact never lose money! They are profitable even though in real markets companies do lose money from time to time. Also, the utilities appear to be inefficient in the same way. In both countries, we as consumers cannot choose who we buy our power from. We must accept the supplier in our area. In both systems the investments made by the companies are approved by the government, and these governmental decisions lead to very inefficient investments. And as we do not have any choice, the companies in both countries behave the same way. If you call the local utility here, they are rude to you because they are a monopolist, and as Tom put it, they used to be rude in the United States until they were opened up to competition.

I think we should, in studying regulation, move away a little bit from the details of how the systems are designed and what the exact rules are. It appears that if the government controls the prices and deters entry (because here in the Czech Republic you just cannot come up with a business plan that you want to build a power plant or a distribution network, the same way it used to be in the U.S.), then the outcomes are completely the same. Now people start to realize that it is not a good system when we do not have these precise rules, and the government guesses as to what the price is going to be. But what I see happening is that they seem to me moving toward an American-style regulation, where they will collect information on costs to calculate prices and try to plan investment efficiently. I think that is essentially the system that the United States is leaving right now, and which Britain and some other countries around the world have already left. I do not think that is the way we should proceed. We should proceed with the direct way of opening up the market to competition.

Jiří Schwarz: Questions or comments?

Mark Robinson: I am Mark Robinson from Eastern Group, a UK energy company which has some interest in the Czech Republic. A question to Michael: You spoke at the end of

your discussion about what I would call economic externalities. Here in the Czech Republic, or in Central Europe in general, I think accusations have been made, certainly in 1989, that the power industry was relatively dirty and polluting and so if there was competition on the pan-European level Western Europe would be exporting pollution to Central Europe by importing its cheap power. Do you think you should also have a separate statement from your electricity costs identifying the costs of pollution or of cleaning up pollution? And a subsidiary question to that, also in terms of energy policy: If you take an energy policy decision that you want to have an indigenous generation source – for example Temelín – do you think the additional capital costs should be separately stated as an externality in some form on your electricity bill?

Michael Block: Well, that is simple; yes, yes and yes. Let me say a few words about that. It is interesting how the argument about Central Europe and Western Europe really parallels the argument about the Midwestern United States and the Eastern United States. In the Midwest, all generators burn soft coal in high stacks. The argument made by the Northeastern utilities (who did not want deregulation) was that deregulation in the Northeast would dirty the Eastern United States and Canada because of increased generation in low-cost Midwest power plants. So they sort of use the pollution argument to stop deregulation. In the example that you posed, it seems that if the pollution stays internal to the country, which is unlikely in this region, you probably do not have much of a problem. But it does flow over the borders, and so it is essential that, at least as I understand it, the older technology here needs to be changed to conform with green requirements the Czech government has just entered into. So it seems to me that those charges listed on a bill are a good idea, but getting deeper into this I would probably start posing questions that are too academic at this point.

Mark Robinson: Realistically, I was thinking more of the case when it is on the bill of the distribution companies rather than on the residential bill, but basically … just to state explicitly the difference in costs between the dirty technology and the cleaner technology. I would not specifically talk about the Czech Republic because I think that the Czech Republic has done many things to improve environmental performance, but perhaps some countries have not.

Michael Block: To make my point clear, the reason I got into this issue of local as opposed to global is that if the pollution is local, adding it on the bill is really quite useful. It gives people an idea of how expensive this clean technology is, and maybe they really do not want the air to be that clean. Maybe there is a trade-off between how clean the air is and what the expenditures of cleaning the air are. If you are exporting the pollution to your neighbors it is a much more difficult issue.

Tom Broderick: I participated in a number of these externality processes where the pollution damages are reviewed, for instance, every three years, and my personal experience is that it is the estimation process that is the real difficulty. You may agree in theory to address these externalities, but I have seen changes on the order of two to three hundred per cent in the estimates of damages from pollution from one three-year period to the next. What I generally saw was high estimates of externalities falling dramatically in the next three-year period. The environmental issue was a tremendous issue when FERC issued Order 888…

Libor Dušek: You may want to say what Order 888 is.

Tom Broderick: FERC Order 888 was a landmark decision in which the FERC established open access, common carriage terms for the entire private grid in the United States. Many people opposed that because it was a major step along the way of electricity competition. FERC undertook a massive environmental study, exactly of the issue that Michael talked about. They had to do that because Congress, particularly the Senate, was doing an oversight of that Order and required FERC to undertake that study. At the end, the Senate agreed that the study was satisfactory and that the Order could go forward.

Michael Block: I would like to add a general comment. I think that the environmental issues, at least in the United States, are used as a Hobgoblin in the regulatory or deregulatory debate. In the beginning we saw monopoly utilities in the United States warning people about the great dangers of having two or three utilities in a particular area. That argument does not sell very well now so the current way of alarming the population is the use of potential environmental disaster. My own view is that, at least in the United States, we have to be very careful about that. I do not really know the local situation, but I have been in the Czech Republic during winter and I could smell that there is significant pollution, so the environmental issue might be more pertinent here.

Tom Broderick: Environmental issues play into regulatory failure quite significantly in that the utilities in the U.S. can make concessions to state regulators which tend to be pro-environmental, for which they receive more lax standards. There is a bit of an agreement there: Give me a lot of stranded costs and I will do this type of environmental program for you.

Jiří Schwarz: We can go on with the questions, but we have to finish by quarter past six. Now you have an excellent opportunity to ask for free, but after quarter past six you will have to pay. There is no free lunch.

Jiří Zeman: My name is Jiří Zeman, I'm with SEVEn, a non-profit consulting organization here in Prague. I have a question for both of you. You mentioned the new technology that led to a revolution in the electricity market and you mentioned the price of gas, which is low in the United States. The cheap gas, together with the new technology, makes an independent power producer competitive. The situation here is a little bit different as the gas price (compared to the price of electricity) is much higher and the new independent power producers using gas are not competitive. We do not have such big problems with stranded costs (maybe with the exception of Temelín, a nuclear power plant) but we have the problem that the market may not be competitive enough when competition is introduced. So one option is to have no barriers to imports, even short-term imports from abroad, and no barriers for entering the market by foreign utilities. Is it enough in a case where the marginal costs are higher than the average costs? What do you think?

Michael Block: Thank you. One reason why I used Germany in that rare example of Americans actually looking outside their borders is the German price of natural gas. Gas-fired electricity was still very cheap relative to their grid prices. I know just a little about the Czech situation, at least that energy is vastly underpriced for residential consumers, but I do not know about the overall costs, whether electricity is underpriced on average or not. But the reason I used the German example is that their natural gas prices are probably about the same as the natural gas prices here, and even in that case the new technology is cheap relative to their grid prices. So, certainly in Germany the example works. In the Czech Republic what you are saying is that the new gas technology would be more expensive than the existing technology. Is that because something else is underpriced, or is that because that due to real economic cost? In other words, why is the Czech example so much different

than the German example? Is it because the grid prices are too low here, or is it that, essentially, the grid prices here are right and the grid prices in Germany are wrong? I know the example works pretty well in Germany, so what is so different here?

Jiří Zeman: There are still some subsidies in the power sector, such as subsidies for the coal industry, and coal stands for most of power produced in our power plants. There are also some indirect subsidies, for example, state guarantees for the World Bank loan for the construction of the Temelín nuclear power plant. But the main reason is – I think – that our local power production is based on cheap and rather "dirty" domestic lignite or brown coal, and that the power plants were build far before 1989 – in the period of very low investment costs. Gas, on the other hand, is being imported at the world price.

Michael Block: So if you revalue those old investments you should get the numbers right. I was wondering whether the market price of electricity would be such that it is still pretty expensive to produce with the old plants relative to natural gas, or is it just that there are artificial prices in terms of the historical costs, in which case I think the same argument holds. I think there are special issues in the Czech Republic in terms of natural gas. The availability is probably still not quite as open as in Germany. In terms of the U.S. example, certainly the natural gas question makes the whole regulation of the grid superfluous. The question is how far is it from that in the Czech Republic if you were to straighten up the natural gas situation? Do you not really have the same logical issue that it is at least a cap to what can happen with electricity grid prices? You should be better off with more freedom in the grid prices than less.

It is also important to take a forward-looking perspective. You have to try to get the right investments. Our experience, again, is that a regulated environment gives you terrible investment decisions. I think you probably have some bad investment decisions under central planning, maybe they are a little better under cost of service regulation, but they are still pretty bad. I am sure that the results of our experience are useful in that respect. You can take a little market power or you can take a lot of distortion in the markets and still be better off than you would be if the government interferes. You just have to appreciate the *scale* of the stranded investment problem in the United States to get an idea of how badly the regulatory system works. Actually, the problem is compounded by not only the cost of service regulation, but also by the absolutely wacky nuclear regulatory authority that just inflates the costs of nuclear power. We never had a real accident in the United States but we are preparing for our own Czernobyl, although we do not have any reactors of the Czernobyl type. That has driven the cost of nuclear power way out of sight, which contributes to stranded investment, hand-in-hand with the cost of service regulation. The cost of service regulation has been a large component of our problem. Anything you can do that relies on alternative technology to discipline the markets seems, to me, to be worth doing. If you can get the gas distribution network freed up at the same time, it seems to me you can get tremendous benefits out of that. I think the worst things to go towards are regulatory systems. In some sense, the Germans are even less bound by cost of service regulation than we are. Rural oriented as that system seems to be, they have never regulated as much of the electric grid as we have.

Jiří Schwarz: Any comments?

Tom Broderick: I will have to come back in a year and address this question a little bit more because in the United States we are just beginning to get data on electricity restructuring in some states where power is already very cheap. For instance, the states of Oregon, Washington, and Idaho tend to have presently very, very low prices. Consumers

in those states ask, "why do we care, how do we benefit?" Actually, some of the features of competition that are just now being understood, like increased flexibility of service, go way beyond prices. For instance, you may be a customer who would like to have a new type of billing, you would like to have billing that covers all your facilities, maybe some facilities that are in Oregon, some that are in California and Texas, and you would like to have that billing totalized. Or you would like to have those bills all read on the same day, say on the 31st of every month, because you want them in time for the close of your accounting system. You might like to have a revision of the metering capabilities at your facilities so that you can participate in greater pricing features such as hour-by-hour pricing or daily pricing.

I assume that the Czech tariffs at present are some sort of average prices, but I would suggest that once customers were faced with proper pricing signals you may see a lot of behavioral change. Then your estimates of what market prices are for, say, domestic or residential customers could be really quite wrong once those customers begin to get appropriate signals. As I have said, we are just now starting to get information on that. These are the jobs that people like myself and Mr. Robinson do, we try to satisfy customers as best we can so that they would choose us for business. The problem we have is that after time the prices that we might offer are virtually the same, so we have to compete on non-price dimensions of service. So I am going to leave you with the thought that electricity competition is not solely about price or keeping your lights on. It is about satisfying customers in ways that we are probably just beginning to think about.

Michael Block: Tom has reminded me of something that would be useful to address in the context to the last question, and that is the upside-down nature of the Czech pricing system, in which most of the voters pay too little for power. Let us talk about this in terms of political economy, which is something I spent some time on. If you have most of the voters paying too little for electricity, competition is not going to come about because some pointy-headed intellectuals or consultants said that it is good for the society. Because it is bad for a lot of people on a day-to-day basis, they do not believe books or columns by academics. What you have to figure out, then, is whether there are enough gains in this system in order to pay-off all these residential customers. Can industry do so much better out of this that they can essentially bribe the consumers (to use a sort of pejorative term)? Or, to put it in a more polite way, can they compensate the consumers so that they *all will be better off?* The real gains from competition are dynamic gains. Again, come back to our experience. I cannot emphasize enough how *bad* the capital stock is in the United States. You know, I loved those big plants. I was a kid that grew up in the fifties and sixties and I toured utilities plants and I loved them. The nuclear plants were huge, and their capital was great and it was wonderful. But the problem is, it is probably all wrong! And we buried a fortune in these costly plants. They all look nice, but we did not need them.

In some sense, that is the real warning about regulation, and the real lesson about the benefits of competition – the dynamics going forward. Just look at the way air travel occurs in the Unites States now. We had a well regulated system just like the Europeans. We used to have regulated carriers, and only two carriers were going to certain places just like you have with most city pairs outside the Czech Republic. You have your carrier and the host country's carrier. When I was very young I worked as a consultant to one of the upstart airlines trying to break into markets, when you could not get into a market. There were two regulated carriers and the Civilian Aeronautic Board, a regulatory authority with a fancy name, would not let you enter. Everything was well regulated. You had one flight at six in

the morning and one at six in the afternoon, and everyone was supposed to be happy. Now we have one fight every half-hour between Phoenix and Los Angeles, which is about 250 miles. If you plan your trip long enough in advance, it is about seventy dollars round-trip. No one could have predicted fifteen or twenty years ago that the type of capital stock that these airlines use and the systems that they use to serve customers would have developed. The same is true about electricity. The real gains are the dynamic gains, it is the type of capital stock that you get going forward. You want to do everything you can to get into the position of taking advantage of these dynamic gains, and the most important beneficiaries from that are, I think, the industries here. Time-of-day pricing probably does not make much difference to residential customers at this point, but sophisticated time-of-day pricing, time-of-year pricing, and having lower prices going forward is really important to commerce and industry. But you never get to it unless you find some way to compensate the residential consumers. You have to do that since the reality of politics is that if you have some sort of democratic system, you will never get such a change passed.

Tomislav Šimeček: My name is Šimeček, and I am from the Association of House Owners in the Czech Republic. I would like to make a very controversial statement in one question, and then make two comments. The first question is: Can you imagine that a company in the United States can run a business where the receipts that the company gets are only one third of the costs that the company spends for running the business? A company that would be prevented by the law to switch off a consumer who does not pay for its services for the time of something like three to four years? Do you think that such a company could exist?

Michael Block: Yes, we used to call it the United States Post Office… ..

Tomislav Šimeček: But in the U.S. Post Office, there is at least some money coming from somewhere. What I described was the situation of the residential tenancy business in the Czech Republic. The rents cover less than one third of simple reproduction costs of houses. That is precisely the reason why we do not like the deregulation of energies. Deregulation of energies is the main reason why the rents cannot be increased, because it is unbearable for the social situation in this country to have families spend more than 16 percent of their net income for their housing, including utilities. The energies and services now represent something like two thirds of the entire costs of housing. Now the two comments. I would like to say that first, regulation of prices is being said to be for the welfare of the low income families or individuals. That is a pure lie, because once you start regulation it becomes the most effective way to put two-thirds, or maybe three-quarters, of the subsidy to high income families and smart individuals. You regulate the price without solving the main problem, which is an insufficient income of those who should pay for the services. That was my first comment. The second comment will be more or less a question. In our country, the developer of a house or a set of houses has to build the entire supply system for water, gas, and electricity from his own pocket. Then he is forced by law to give this to the utilities that will then supply him with gas, water, and electricity. Is something like that possible in the United States or not?

Michael Block: That is a great comment. It also reminds me that the biggest city in the United States has had rent control slightly modified over the entire post-war period. It was precisely that rent control which I think was responsible for the suburbanization of America (at least in New York), since it crated an enormous housing shortage. It was a regulation of exactly the same form. The rate of return that landlords were allowed was insufficient to maintain buildings. It has exactly the same aspects, in which you cannot put tenants out, and it has exactly the same results. There are similar provision in some places in the United

States in terms of having to provide the infrastructure for the utilities. Tom can probably answer whether the utilities then get a rate of return on the infrastructure that was provided by someone else.

Tom Broderick: Well, hopefully it is not that bad.

Michael Block: So they do not get a rate of return on that but it is there anyway. I am interested in the 16 percent as a proportion of income spent on housing, because that is low, certainly by American standards and I think also by Western European standards. I thought it was nearer to 25 percent, and it is certainly higher in the United States. A lot of that is just given, and I think with electricity you need to take a different approach. If competition really adds value, the winners ought to be able to compensate the losers. So the commercial firms (which I suppose are the big winners in the competitive system) and manufacturers ought to be able to pay-off the residential consumers, to actually send monthly stipends to lots of residential consumers. This should be the way to get the residential consumers weaned-off of subsidized electricity. Housing is an even bigger problem, and you are a better expert on what that means for the future. But New York is a great example of what you can do with a city with a free market that has regulatory controls in one sector. We cannot get a rid off rent control in New York because too many people stand to lose. In electricity, I think you can get around this problem by arranging some compensation transfers from the industrial consumers to the residential consumers. That probably has to take the form of monthly payments of some sort. Some mechanism has to be found to offset those losses.

Essentially, if there are gains from competition it will be better for the industry and commercial establishments to buy-out the consumers who currently pay subsidized prices. Saying “competition is valuable” really means that there are more gains than losses. Even if there are more gains than losses but it is just too expensive to get those gains to the losers, it is probably not worth doing. I think that is not the case. There *are* big gains to getting the system right. Especially since the Western Europeans are taking a long time to get that right. They are having tremendous difficulties with infrastructure issues. They are about to have an open telephone market, followed by an open electricity market, and I think they are about to have two big problems with that. Anyway, I think your point is really serious: You cannot impose these high costs on residential consumers and just promise that there will be a better day in the future. There has to be some mechanism to compensate.

In a project that Libor and I did, we were in part motivated by the Czech experience with vouchers. We suggested privatizing the federal Power Marketing Administrations, which market the power from hydro dams in the United States. Hydro power, until very recently, is much cheaper than any other power in most of the country. And so in large parts of the Western and Southeastern United States, lots of consumers get power at prices much lower than market prices. As soon as you go to privatize those, defenders of free markets descend on Washington and convince everyone how terrible it would be for the United States to have more free markets than it already has. And our idea was, drawing from the Czech experience, why do you not just give vouchers to the consumers, vouchers that would entitle them to buy shares in these Power Marketing Administrations. Give them in the proportion of their use, and sell them at a huge discount. Then the market price is far above what they can buy it for, and you will have a big capital infusion. We have actually shown that the capital infusion can be large enough to pay for the likely increase in price, because we had exactly the same problem there. The prices will go up as soon as the Administrations leave federal hands, and you have to convince the consumers that it will not hurt them. I have to tell you that

initially I have not had a lot of luck with this, but from the times that we were able to actually explain it to people, we got a positive reaction. But it is exactly the same problem of trying to compensate the residential consumers. Now you do not have that much margin in ČEZ anymore because almost 40 percent of it was vouchered in one particular way, so you have only sixty percent. I mean you do not have a lot of space to move in that direction, but you might actually be able to use it and find a way to do that. The company is probably worth much more free than it is regulated, at least in the transitory stage.

Tom Broderick: Frankly, people with low income have a hard time paying for everything, not just electricity, and so why not address it through overall income transfer policies. It is a bit different in the United States – there the utility does own the delivery system. What I perceive happening is the desire by many customers to own their portion of the delivery system, because once the tariffs are unbundled you pay a distribution charge. In many cases you will find that you are paying much more than you need to pay for the actual cost of your facilities. There is some precedent in that. The federal regulators on the wholesale side use a "direct assignment method" where they will literally look at the depreciated value of the lines, the transformers, the substations, and charge you that. Presently, the retail prices are an overall average. So for instance, if you are a customer who perhaps pulls electricity at a high voltage, or you are located very close to the substation, you might be better off if you purchase your own facility and no longer pay for the delivery system. You just own your delivery and have some contract for maintenance as necessary. That way you can lower your bill substantially. I would predict there will be a massive change in the pricing design for delivery because the obvious problem then is that for those customers that are farthest away, their prices start to go up. So I think there will be a significant change in the way delivery is priced.

Tomislav Šimeček: Just a comment on this. What I was saying was that if you are building a house and you are building your electric connection, including your transformer and high voltage system, you have to invest your own money in it. At the moment electricity is switched into that line, however, it becomes the property of the distributing company, according to the law. So you have built it, you invested your own money, and at the moment when it is finished it becomes the property of the distribution company and you have to pay all the charges.

Michael Block: Is that not also true in the U.S.?

Tom Broderick: No, not really. They finance it, but I believe the idea of what you care about is property. Why do you get this intrinsic value to the homeowners? But the last point that they pay off the charges is quite stunning to me since I assume you would not pay the charges if you already paid them. It sounds to me like a double payment.

Jiří Schwarz: Any more comments? Any other questions? If not, I appreciate your participation here, and I am quite surprised by the high number of participants here considering the holiday time in the Czech Republic. I think we had an excellent opportunity to have both of these experts on electricity deregulation with us. I would like to invite you to have some refreshments that we prepared for you, as always. I would like to thank our sponsors, Eastern Group, plc, the PEAS, a.s., the ČEZ, a.s., the Coca-Cola Amatil, plc, Benešov Brewery, Tchibo Café and the Friedrich Naumann Foundation. Thank you very much for your participation, and thanks to our key speakers. I think that they deserve our applause. Thank you.

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