

פרוטוקול ישיבה מיום 9.1.2012

הועדה לבחינת מדיניות משק הגז הטבעי בישראל

ישיבה מיום 9.1.2012

משתתפים :

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שאול צמח: We are pleased to have you here, this morning, on Nobel energy, pioneers of the gas discoveries in Israel. First of all, thank you for coming. I will start with some technical issues. First of all, we have you on record, so take it into account and everything you will say can be published in whatever media will find out the conclusion of the committee. The second think is that if you are saying something that is confidential commercially, please say that and we will take it off the record if you would like that. I'll introduce some of the committee members. First of all, Shaul Meridor - from the ministry of finance; Professor David Gillo, which is the .. commissioner; Alona Shffer, from the ministry of environment; Pini Avivi, deputy director general of the ministry of foreign affairs; Saar Shafir and Avriel Bar Yosef from

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the national security; Mr. Gabbi Golan from the ministry of the prime minister; Shuki Stern you know and Mr. David Aharon - our advisor. So please, for the record, introduce yourselves and start. You have something like 40 minutes and then about 15 minutes for questions and answers.

לאוסון פרימן: Thank you very much. Thank you for having us. I'll make the introductions of who we brought. We have Bini Zomer, who is our director of corporate affairs. I am Lawson Freeman, VP of Eastern Mediterranean for 'Nobel Energy'. We also have with us Greg Beard, who's our director of LNG commercial development here in Israel. Noa Almog, who works in corporate affairs as well for 'Nobel' in Israel and with 'Mackenzie', Jonathan Kolodny, who we have retained to help us out with this study. So, thanks for having us, I appreciate you hearing us today and I'd like to encourage you

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to ask questions as we go through, you can save it till the end or you can ask is as we go, maybe informally is the easiest way so as we go don't be shy about doing that. I can't answer any questions in Hebrew but we have people here that can so, whatever is best and whatever is most constructive, please feel free as we go and we'd like to have some dialogue and some discussion here and answering your questions if we can as we go.

שאל צמח: If we want to understand it accurately, we would like to hear it in the language that you feel you will have the message the most proper way so you will choose the language.

לאוסון פרימן: I'll be starting off with this and then there are portions of this that have to do with sort of an international oil company view of the basin and there are portions that have to do with a bit of a global study, a bit of a world study of what's seen in basin similar to this. Those will

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be passed over and Jonathan will cover those. It will come back to me for a bit of the dialogue as well. I guess the message that we're starting off with here is a message that I think that you're expecting from us, that we believe very strongly, which is that the resources discovered to date in the basin exceed Israel's domestic gas demand for decades to come and so, part of what we'll show is why we think and feel like that the prize is development of what we feel like is the remaining potential there. Full development of the basin, which we think is 3.5 times, something like 3.5 times the numbers that have already been discovered and (not clear) answer the question for us or the question that I feel is pertaining is what are the appropriate policies, what would they need to look like to encourage full development of those resources. Here's a depiction of what that might look like and most of these numbers you've seen before and these

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aren't drastically different from the original submission. They have been updated just a little bit as we've updated our resource numbers but if you look at the discover to date, 760 BCM is the number that we're using there and these are all round it of course and the level up there of 25.30, that's simply the total amount converted over to BCM of the 122 TCF number that gets shared around of the USGS number that everybody has heard about and read about of the 122 TCF. So that's the presumed total there and the portion that we're talking about for Israel is a somewhat arbitrary $\frac{2}{3}$ of that. We don't know, obviously, if it's exactly $\frac{2}{3}$, we think that there is some rational for that, but that's a very imprecise number so, there's nothing magic about that but it's indicative so we're using that 122, $\frac{2}{3}$ of that being roughly 90, so the 90 TCF is 25.30 so that leaves us with the assertion that there's something like 17.70 there that is a

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potential that explorers international oil companies would look out for a potential to explore. So you start from there and then waterfall down on the demand forecast and these are numbers that I know there's some range of fluctuation in these numbers too, depending upon who's forecast you're looking at, but I feel like these are fairly standard numbers over the next 30 years for what the domestic demand is going to be. Obviously, there is some play on different assumptions that you could use but we're saying that that's a total of 480. So we're stepping down from that so that's 30 years of demand, 480 basically showing and highlighting what we're asserting which is that there is an excess. So, there's an excess there that is an amount that would be indicative of a basin that people would look to come in and explore and export so obviously, our assertion is that that should be what's desirable and so how do you go

about doing that? How do you go about creating an environment that you want to do that? So, just kind of a bit of a waiving of the hands there on the 90 TCF. Here's another thing that kind of comes at it from a different direction, instead of top-down this is a little bit of bottom-up. This is a creaming curve that says, typically for gas producing basins in the world or hydro carbonate producing basins in the world, what is a creaming curve look like So that the Y access on this is the technically recoverable resources, from 0 to 100% and then the years going out on the right, in a typical basin and there's all different kinds of basins. We've picked some that we feel like are useful here but, basically what it says is it starts out people go after the most obvious things first, maybe the shallower things first. You go up a line and then it gets harder. It gets harder to find, the fields get smaller, the size of the accumulations get

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smaller, it starts bending over and it takes more and more years to extract a little bit more out, sort of asymptotically to the right. So, that's just a sort of what we would call 'a classic creaming curve'. This one happens to be for the North Sea in the UK. If you go to the next one, here's what the same curve looks like for the North Sea Norway, Gulf of Suez, Egypt, the Atlantic Ocean, Nigeria; Shelf Gulf of Mexico and then here's what the Levant basin looks like now. So, if you take the resources that have been discovered so far, and we're actually including the entire basin in this one so this is Cyprus as well. If you look at the basin as a whole and compare it with what we're calling 'the 120' TCF number, 121, 122 TCF number, this is what we look like in our number of years since the major discovery. This is where the Levant basin is now. There's nothing that says that that's very scientific, other than it's indicative. It

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shows that you're in that early phase and it would suggest that there's reason to believe that if the basin is like many other basins, that you're going to have that same sort of curve going to the right. Now we get into a bit of a world view and I'm going pass it over to Jonathan.

יונתן קולודני: Few things, first of all, if you look at this chart, what we're put here is we've ranked all the countries in the world by their proven gas resorts. Obviously Russia at the top, all the way down to Oman at the bottom and if you look, already the discoveries that have been made put Israel from nowhere basically, in the 28th position. If the recourses that Lawson was speaking about were actually developed to their fullest, it would actually catapult Israel to number 15 in the world of gas recourses, which is quiet significant. The bars that you see here of the different colors, the ones that are light-

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blue, those are countries that all export. So what you see is based on where Israel will be with the exception of a few countries who have good reasons why they don't export, primarily because they use the gas to re-inject in order to export oil. All of the counties above Israel and those below Israel, where Israel will be in terms of its resources, are exporting gas today and so, our perspective would be, this actually would make Israel in the major leagues of major gas exporters should these resources be developed. The implication obviously of allowing exports and allowing these basins to be developed, is significant in a number of dimensions. We mentioned upfront there are obviously environmental implications but equally the financial implications for the country are quite significant. On the left what you see is, our assessment based on discussions with experts and with other companies. If you were not to

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allow exports, the assumption is basically what you have today, the 760 BCM is where you'll stay, because without exports people will not be interested in coming here and exploring and thus, you'll get about 4 year of domestic (not clear) satisfaction, about 3 billion dollars, government take, based on the profits that we anticipate you will get from the sales to the domestic market and a GDP increase of roughly 60 billion. Against that, will you to allow the full development of the full potential, which we estimated around 2,500 BCM, and this is an important point to stress, you actually get more years of supply. This maybe counter intuitive but allowing exports, by allowing further development of the basin, that in turn will increase the number of years of supply to the Israeli market. In addition of course, the value to the government from the tax proceeds is over a 100 billion dollars and what we calculated was

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what is the spillover effect, when you develop an industry like this, looking around the world, what kind of jobs get created around the industry and what the spillover impact is on the Israeli economy. You get close to 300 billion dollars, of increasing GDP over the course of the 60 years, which is essentially the life of the basins we looked at.

שאול צמח: So that includes the multiplayer?

יונתן קולודני: Yes, that's the spillover, exactly. So, what additional GDP effect would you expect to get as a result of the development of this industry? The question is, how do you create a set of policies that would actually encourage the players to come it? And what we've tried to do is give you a few examples. I know that, having read the submissions to the committee you're probably quite familiar with these but, I just want to quickly contrast for you some of the different countries who took three somewhat different

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approaches to how they looked at exports from their basins. Norway, as you can see, basically from day one said 'we're going to allow unrestricted exports', and you see a very nice growth over the last 30 years of 7% in their total reserves. So in other words, you add back into the production the reserves that are left in the basin, what you get is a very nice increase over time. So even allowing exports – the reserve base is still growing. Australia, similar fashion, they allowed exports. When I say 'conditional exports', originally there was a requirement to keep something like 15% of the gas for domestic purposes. That's actually later been relapsed because they found they had so much gas, there wasn't any need for 15% for domestic demand. But even so you see a very steady increase over time, about 10% per year. And then the counter example, which I think you've seen from (not clear) of other entries as well, is Bangladesh,

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which is actually a sad story. Bangladesh had tremendous potential, actually they didn't specifically ban export, they said 'we just want 50 years of supply', but to have 50 years of supply would have required companies to come into the basin, develop the resources until they reach the 50 year point and then start to export. That was not an attractive, as we'll talk about, an attractive prospect for these companies and as a result, as you can see, basically with some small exceptions, the overall reserve hasn't grown. So let's go into each of these one at a time and I encourage you, if you have questions about these specific cases samples, please ask as we go through. One important note about Norway's success story is the fact that they made a choice to funnel the value creation from their reserves, the proceeds from these reserves, from the export, into their (not clear) and it's been a phenomenal success. The 4.2% that you see here

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is, again, some years it's more some years it's less, but over this entire period they've achieved 4.2% returns which, if you look at this chart, the gray there is the return they get over and above the reserve. Meaning, by keeping that money in the (not clear) wealth fund that money compounds. Gas reserves don't compound, if I leave the gas in the ground, it's going to stay the same or perhaps go down. If I take it out and sell it, put the money into a (not clear) wealth fund, we tend to see even greater value growth. The numbers are staggering. I don't know how familiar you are with they Norway case but, they basically balanced their budget every year based on the proceeds from this. So they've had a balanced budget since 1993, they've never had a budget deficit since. They actually own 1.5% of all the equities, all global equities worldwide. So, it's been a tremendous success for them and again, the process was: allow exports, attract

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players to come in and develop the basin and use the tax proceeds to fund the (not clear) wealth fund). In contrast, if we go to the next page, what you see here is the success story of Australia. Essentially, in 1979 Australia made the decision and it's interesting to know by the way, Australia in terms of the size of the basin is actually not too dissimilar from where Israel finds itself vis-a-vis the Levant today, in terms of the overall proved reserves. They made a decision in 1979 to allow exports, it took 10 years for that to ramp up, to build the facilities and starting in 1989 they started the first shipment to Japan and what you see is, despite the fact that they kept back 15% for domestic consumption and domestic consumption did indeed grow over time, they still managed on top of that to allow exports and grow their overall reserve base and indeed, our current projections, if Australia continues to grow the

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way it has, although its (not clear) at the moment, they could actually become the second largest LNG exporter in the world in the next few years.

שאל צמח: What was the situation between the '70s and the '90s?

יונתן קולודני: I think during that early part of that decade, they weren't quite sure what they had there. I think they were still trying to figure out exactly how large the basin was. Once they realized that they had a significant amount of gas, more probably than they will need for their domestic needs, that's when they said 'O.K., let's allow exports. We'll make sure we have that reserve for the country', that was the 15% they talked about, 'but at the same time we'll allow exports over and above that' and it took 10 years for that to build up and then over time what we've seen is although exports have continued to grow, domestic consumptions continued to grow

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but even so, their reserves have continued to grow as well. And this gets back to the point I made before: if you allow exports, if you allow basically international oil companies to monetize what they find – they will continue to search for more and when they continue to search for more they find more and they increase the security of supply to the country, and this is indeed what's happened.

שאל צמח: Beside the amounts, is there any influence on the prices of the gas between those two periods, with the export and without the export? In terms of the,

יונתן קולודני: Were domestic prices held artificially low or were they held at market (not clear)?

שאל צמח: Was there any influence between,

יונתן קולודני: Was the fact that they exported effect the domestic price, is that what you're asking?

שאל צמח: They had certain prices before the export decision. When they decided to export, did you

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find out any kind of influence of that decision on the local prices, on the domestic prices?

יונתן קולודני: Domestic prices did not go up as a result of that, no. In fact, I would argue that with greater development in a basin, you actually create more competition. You have more players coming in, all of them had an obligation to make sure they could supply the local market and so there was, if you will, more players competing on that local market which they had to supply. Over and above that, what essentially happened was, in a market like this where there is export; the domestic prices tend to eventually reflect the overall market prices that these companies can get through export. So, a netback price if you will and it tends to become equivalent.

אבריאל בר יוסף: One thing you mentioned before is that it is in the governments interest to create some kind of an industry which will grow up along the gas exploration, which eventually will increase

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the revenue from all the gas industry. If you look into this graph, what is the contribution of the industry you mentioned (not clear) to contribute to the revenue of all the gas exploration?

יונתן קולודני: Let me clarify what I've said before because I may have misspoken. When we looked at the spillover for the gas industry we were looking specifically at the exploration production infrastructure, basically to bring that gas into the market and ultimately be sold for export and were provided for domestic (not clear). We actually did not, and I can expand upon this if you want, we did not expect a large growth in industrial, if you remember that chart that showed the 480 demand, the vast majority was gas for power. There was another bit for transportation and a very little bit for industry and the reason for that frankly is that, when we looked at the economics, where would Israel be,

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and we did this industry by industry, we said 'let's take Israel's gas and figure out could we develop industry around that gas, let's say methanol for example. Where would Israel sit on the global (not clear) vis-a-vie other markets' and, there are some great examples. If you look at what Saudi had done, they essentially export their gas in the form of petrochemicals. The question was could Israel be competitive. If you look today at Israel's cash costs for developing methanol for example, our costs would be above the global price. So, we didn't anticipate a lot of industrial growth as a result of gas. I was referring more to gas production, development and infrastructure in Israel as opposed to overall industry.

דניאל אהרון: I think it's quite an important question but I think we have to realize that the prices that the specific industry, and I think that's what you are talking about, you're not just talking

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about (not clear) which is significant. I think we have to start with the point that, in Saudi Arabia, for example, they developed an entire petrochemical industry but it was based on a gas price of half a dollar (not clear) BTU. They've increased it to 75 cents now per (not clear) BTU, but you're not going to get any gas coming out of Israel's off shore at that sort of prices.

שאול צמח: David, we will not go into further details, we want their answers and not yours.

יונתן קולודני: So to answer your questions, Australia did develop more domestic industry around it's gas, probably more then frankly we anticipate would be in Israel but the vast majority of value that was created was around the export and continues to be created. Around the industry that grows up around the export (not clear). Bangladesh, again, this is the counter example that I think you've seen in a number of the submissions and again, it's a story whereby at first they were

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very open, they invited international players to come in. These international players said 'O.K., now we'd like to export the gas that we found'. They said 'you can do that once we have 50 years of supply'. They said 'well, we're not going to wait until we find enough to have 50 years of supply' and they left. And indeed, if you look at the statements of the majors that were in Bangladesh, when they left, they explicitly sighted this restriction as being the reason they departed the country. 'Shell' for example. So, it's actually a shame because, basically from the initial analysis they could have actually found much more and they let that opportunity go to waste.

לאוסון פרימן: Just a bit more about the view of an international oil and gas company coming into a basin and trying to do justice to looking at the view of another international oil company coming in and looking at something like the

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Levant basin. Basically what this depiction is, is a couple of things. One is the probability of success and you've heard me talking about a decision tree and this is really all the same concept. The probability of success from the exploration phase or certainly also the infancy of a basin all the way to where you really feel that you understand the basin, it's mature and it's a producing asset. So you have a low probability of success all the way to a very high, obviously at the later stages of the project and the point that I want to make on that is that anybody coming in, even though there have been big discoveries in the Levant basin, anybody coming in and saying 'I'm going to go in there and look at a prospect and be interested in prospect', they will be looking at this left part of this curve. They are going to be concerned about that they are actually in a very early part of the basin. They are not going to view it as if

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they are in a very mature producing basin, where the unknowns are largely known. They are not going to look at that. So, the other thing to point out in this is that in these different phases, and you've heard me talk about this before, is that everyone knows that when ever you come in, you start out very negative in your cash flow and then obviously you have a period of 3, 4, 5 years before a project actually comes on and you know what your cash flow is, it's in the red, you know what your cash flow is until then and your banking on what it's going to look like out to the right. You're banking on a known predictable revenue stream and we always talk about the reservoir risk, the reserves risk, the exploration risk and those are the things that an international oil company sort of lives with and that's what they do, they manage that and they know that and they understand it for what it is but they know they have to manage that. It

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absolutely has to be from that point forward stable in their eyes in term of, in our economic models, when we look at what we think that we're going to get, given some uncertainties about the cost, when we look at what we think is going to be achievable from a revenue stand point, there has to be a high degree of surety that it's actually going to work in the way that they're modeling it. Because they sit back before a dollar is spent and model scenarios on this sort of thing and if the put a lot of uncertainty on what it's going to look like in the operations phase, they're just going to factor it in, they're just going to model it and they're just going to factor it in. The point I'm making here is that policy is one of the things that can make surety or not surety on that revenue stream, that portion in the right that they're concerned about and if you look at it in terms of bank, some companies self finance, some companies

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obviously do projects financing. It's exactly the same thing with the bank and everyone knows that, they're going to be looking at that and say 'tell me how sure you are about the achievability of that revenue stream that you're putting in this curve that you're showing us'. What are the things that can disrupt that? How sure are you about that? How comfortable you are about that? And they will quiz you on what are the things, the possibilities out there from my policy stand point, they can get in your way and that's why we keep making this assertion that a stable policy that guarantees the achievability of contemplated revenue wedge, if the resources are there, is so important. We wanted to hit just a little bit more specific to LNG projects. The projects that we're talking about now in an export realm are largely LNG projects and we wanted to talk just a little bit about kind of the same view, the producer view that I've just

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described but also the mid stream, i.e. the actual LNG plant view and then the off taker view and all are important in this, they are even more important in a big LNG project than in some others and there's been a lot of discussion and there's been questions about structures. Is there an optimal structure for this, in terms of ownerships, state owned, private owned, multiple players, upstream players, downstream players etc. and, I guess if you look around the world at that, there's not any one magic structure. There's a range of possibilities that are out there all the way from 100% private owned to 100% state owned so, lots of structures exist and lots of structures can work in terms of a big LNG project. One thing that is desirable is vertical alignment and what I mean by vertical alignment is, the producer who has that vested interest in the upstream has some control and ownership all the way down through

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that chain and the reason that I say that is so the priorities are aligned. If you have a set of priorities as the producer, a related but different set as the LNG owner and then a related but different set as the off taker and so, if you have aligned priorities in that, it makes that work a lot more smoothly, the drivers are much more similar and it makes the whole thing much more palatable, frankly. So, that's not required but it's desirable, a vertical alignment. I just wanted to make a bit of a statement about the cost and I feel like it's known but just to emphasize it a little bit. If you look at a big data base of world scale LNG facilities, an average over those 10 years that are shown here, done by 'Mackenzie', is over that 10 years 8.5 billion dollar project for a 7 million ton per annum plant. That's close to the numbers that we sort of throw around. We throw around numbers of 10 million tons per annum. We talk about two

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trains, two 5 million ton per annum trains. We have considered that in various locations so, we throw around numbers of 10-12 billion dollars for a facility that's like that and this is just data that says that's about what you're talking about, just sort of (not clear) from a (not clear) stand point and (not clear) a big project like that, we know a little bit about that so, if you look at our major projects, 'Nobel Energy' major projects in the Gulf of Mexico, in West Africa, here, 'Tamar', 'Livvyathan', they are all multibillion dollar major projects and we don't build those with our bare hands but what we do is we project manage those. The project management that has kept 'Tamar' on track and on schedule does not come easy and the point that I'm making there is, if somebody wants to say 'I want to be the one doing that LNG facility', it takes world class major project management expertise and that's the point I'm

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trying to make on that. The other point I want to make is the financing angle in this. The thing that makes financing so significant on these, frankly, is the size of the capital expenditure that you're looking at there and the financing on this brings in three different pieces into it, it's not that producer revenue wedge only that we were talking about before, it's basically all three: The upstream angle or the upstream concerns, the upstream emphasis; the midstream commercial portion of it and then the off take commercial portion of it. If you draw your circle around that whole thing and say 'that is a great big bunch of commercial terms, it's all part of one great big deal', that whole thing has to be flanged together in order to get project financing for somebody that wants to come and put in that sort of money into a project like this and these things do not happen until that happens. So, the construction will not start, the

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project will not happen until all that stuff is flanged together and so, the stack of commercial agreements that is necessary for something like that is staggering and it's because if you are the financial institution that's backing that or backing a piece of that you have to know that all that's tied together in order to make it work. So let's look at both ends of that transaction. If you are the producer and you on the upstream end of that, you have to know that the important piece of that to you, for your investment, is the revenue wedge like I talked about before. I have to have a predictable stream of revenue that's associated with that project to offset that capital. So that's very important that it's a stable predictable stream of revenue and you turn around and look at the other side, the off taker. The off taker on this that's looking at doing a deal and buying the LNG out of the tailgate of this facility, they're looking at the

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stream of gas, they're looking at the stream of LNG and they have to have a predictable, stable stream of LNG for them to be able to contemplate this thing and go forward. I'm using those words 'stable' and 'predictable' and the reason that I'm emphasizing that is to address this notion that if you do a facility like this, that you can sort of on a year to year basis or on some sort of periodic basis bid out that capacity. It doesn't work that way, you can't do that. You have to know if you're the anchor and if you're doing one of these you have to know that capacity and therefore that wedge, therefore that revenue stream or if you are the off taker that LNG stream is available to you over the long (not clear), you have to be sure of that. So, where incremental players come in typically in an LNG facility is for expansions. So, you have a base facility down there and there's a couple of kinds of expansions. One kind of expansion

that's the most common is just a D bottle necking expansion. You can go in and for an incremental investments D bottle neck the facility, get some incremental amount and maybe that's enough for the additional resources that have been found and then that's an incremental deal. Once again, it has to be flanged up, maybe that's a 2 billion dollar project but that has to be flanged up the same way and that's how it happens is incrementally, on top of that. So you can do it on an expansion or there's even a foot print expansion, more of a real expansion that can happen as well. Those are harder to do but you can bring in more resources doing it that way. But again, coming back to the point, the point is that you can't have a facility like this and have the streams in it change out over time, it just doesn't work that way. That's it for that one. Now I wanted to talk just a little bit, you've heard us talk about premium Asian markets and

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the assertion here is that the reason you'd be interested in a premium Asian market is something like a \$4 per MCF differential in the pricing that's achievable for LNG to Asia versus Europe. Everyone is looking at the same thing; everybody that's interested in selling LNG is looking at the same thing and considering that a premium market. If you look at this chart here, this is looking at an estimate of 2020 LNG demand in Asia and it's this 270 BCMA and so that's just a snapshot estimate of the demand in Asia for LNG. If you look at the blue bars and the gray bars, the blue is un-contracted and the gray is contracts that are either under progress or have already been put to bed and this is what you're seeing over time from 2005 to the present is people going out and contracting for that in 2020 so, this will continue and right now what we would assert is that if that 270 BCMA is correct that, that 70 BCMA that's left for Asian

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markets, everyone that's involved with LNG projects is chasing that same amount. So, that's out there and this kind of speaks to our timers of the assents issue, is that everyone that's progressing these kinds of projects is looking at that same thing and they know that it's a premium market and whether it's exactly 70 or not, of course it's never exactly anything but everyone is chasing that same thing. So again, this speaks to our timers of the assents issue of if you want to create an environment to get others to come and explore and be able to get after these premium markets and therefore get the value to the producers and to the state, time is of the essence there. That's it, we wanted to leave a lot of time for questions so, happy to take any questions.

שחר סולר: I have one question about the Bangladesh (not clear), if you can go back to the slide. We see that (not clear) export they have new findings

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every 3-4 years so, how is it? Because, we've heard many times that if we will not export then nobody will find anything.

יונתן קולודני: There is still activity that's being done by (not clear) players that have been (not clear) Bangladesh but, the international oil companies who potentially allowed you to grown up 2% a year but 7%-10% a year – left. Around any major discovery that already exists there's always a little add on so that shouldn't surprise you but, at the end of the day, they're nowhere near the potential (not clear), about a third of the potential the basic (not clear).

שחר סולר: But do they have enough gas for their own needs?

יונתן קולודני: No. In fact there at a sorry state where they could have been in a situation where they were exporting to a next door neighbor and instead, they're actually importing. I don't think they realized in Bangladesh that they had created a

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situation where by the actual players who were needed to realize the potential will be scared off by this 50 year requirement.

דיוויד גילה: You showed that in countries that allow exports then production grows. Do you have evidence of the causality between them, to show that there's a linkage?

יונתן קולודני: Yes, absolutely. Discoveries grow, the resource space grows, not just the production. The production grows because those that have already been discovered are going to be produced but, what you see is a direct correlation between the kind of stability of incentives that Lawson was talking about and the attractiveness to (not clear) to come in so, the amount of exploration production activity is commencing with the returns that they see in that basin. We have seen it in these three examples and we see in the wealth of other countries as well. You see it in the Gulf of

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Mexico; it's very striking actually and also the differences between the US side and the Mexican side. What you see is that when the conditions are right and there's a way to monetize the gas, the players will come, they will increase the level of discoveries.

דיוויד גילה: And you know that's why they came?

יונתן קולודני: Yes, absolutely. Because again, any company, and I don't want to speak on behalf of 'Nobel', just in general. I worked in EP and other players, they have a (not clear) of options, at any given time you see the number of discoveries that have been made around the world just in the last 6 months, huge discoveries. The opportunities are endless. What's happening is people are sitting back in headquarters and running models saying what can I comfortably predict I would get and then based on it, that's what I'm going to decide to put my exploration (not clear). So Israel, and

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this is what I wanted to stress, Israel is competing to bring those players in with many other basins around the world so we have to always be thinking what do we have to do to create conditions that would attract people to Israel as opposed to going to Mozambique or as opposed to going to Brazil or wherever else they might be.

שאול צמח: I would like to go back to the Australian case. In a certain point of time there is a reason, a motivation for the Australian government to make a decision for exporting. Do you know the background of that? What was the background of the decision of the exporting?

יונתן קולודני: My understanding, and I don't want to claim by any stretch the imagination of being expert in the Australian case. If you'd like, we can expand on what we've got and just send something to the committee that essentially goes into it in more detail. My understanding is when

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they realized the potential of the basin, they realized how much gas was there and they realized it was more than what was needed for domestic demand, they basically realized 'OK., let's make sure we've covered our domestic needs but the only way to get this to be developed to the extent that we want is if we create export as an opportunity to monetize that gas. So, that's what stood behind the decision in '79 to actually allow exports. But if you'd like, again,

שאול צמח: I will appreciate if you will provide more information about that.

דיוויד אהרון: Each state in Australia has its own policy so when you say Australia it's actually western Australia. Western Australia has this policy here, Queensland has another policy and each state is different in Australia.

שאול צמח: I'm talking about that case.

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יונתן קולודני: I think he's speaking about the (not clear) development. What I suggest we do is, since we have colleagues who are involved down there, why don't we come back to you and if there are specific questions you'd like to know, I understand what was the government thinking in terms of allowing exports, what happened to domestic prices as a result of allowing exports and if there are any other question that would be helpful on Australia just let us know and we will come back to the committee and give you a bit more info.

שאול צמח: Thank you. Any questions or comments?

פיני אביבי: What is 'Nobel's position regarding the location of the facility?

לאוסון פרימן: It's all part of one big evaluation. We're studying right now from a purely physical stand point, were are the most feasible locations and it's no secret where we're looking. You know we're looking at the area in Cyprus, we're

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looking in onshore Israel, we're looking across at Aqaba, which would seem to be the places that would be the most prudent to go study so, we're just getting to the period that we're spending some fairly major dollars on the engineering studies on those and we have to see that before we know. We'll find out from that, we'll find out from studying all those things concurrently from a physical standpoint, what are the pros and cons of each one of those much more than we know right now. We look at it fairly simplistically right now, where is it that you can kind of look at a map and say 'there's a front foot print that is available there. There's a bit of infrastructure', and frankly, the way we've gone around and set it is not fatal flaws. We've done a no fatal flaws analysis saying there's not something there that anybody can look at it and see and tell that there's something. It just kind

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of completely stopped it, so we won't know until we do these studies really.

שאל צמח: You consider just LNG facilities or using pipelines for export like Greece or something like that?

לאוסון פרימן: Yes. We've looked at pipeline possibilities as well as LNG. We're focused on the LNG because frankly, when we look at the possibilities for pipeline, they are there but the obvious one is to the infrastructure and to Turkey and for the same reason we're not studying and going down the road right now for looking really hard at Egypt. Things may change but right now that doesn't seem to be the most prudent place to be looking at. We think a pipeline to Greece is just (not clear) we've talked about, it's a massive pipeline, we think just a scale of what's there is not feasible.

שאל צמח: O.K., thank you very much.

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הפסקה - -

שאל צמח: חברים, צהריים טובים. לפני שתתחילו במצגת, כמה נושאים טכניים. ראשית, הישיבה מוקלטת והדברים שנאמרים יכולים גם להתפרסם. כלומר, תביאו בחשבון שהפרוטוקול עם הדברים שנאמרים כאן הוא נחלת הציבור למעט מה שתבקשו במיוחד שיש בו איזה שהיא סודיות מסחרית או משהו כזה, אם יש כזה ואז אנחנו נתייחס לזה בהתאם. דבר שני, יש לכם סדר גודל של 40 דקות למצגת עצמה אז תציגו את המצגת או המצגות ואחר כך תשאירו זמן לשאלות ותשובות או התייחסויות של חברי הוועדה ב-20 דקות שיישארו.

גדעון תדמור: תודה רבה.

שאל צמח: אולי רק נציג את האנשים, אני בטוח שאתה מכיר את כולם. לימיני שאל מרידור – סגן הממונה על התקציבים. משמאלי, פרופסור דיוויד גילה – הממונה על ההגבלים. עו"ד אבי ליכט – המשנה ליועץ המשפטי לממשלה, פיני אביבי – המשנה למנכ"ל משרד החוץ, סער שפיר ואבריאל בר יוסף – מהמל"ל, גבי גולן – משרד ראש הממשלה, שוקי שטרן – מנהל רשות הגז ודיוויד אהרון שהוא יועץ של הוועדה.

גדעון תדמור: תודה רבה. נציג את עצמנו.

יוסי אבו: יוסי אבו, מנכ"ל 'דלק קידוחים'.

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גדעון תדמור: גדעון תדמור, 'דלק קידוחים', 'אבנר'.

יהודה סבן: יהודה סבן.

גדעון תדמור: And we have our two advisors.

גבי לאו: Gabbi Law, (not clear) practice at 'Mackenzie'.

אלינור קרמז: And I am Ellinor (not clear) work at 'Mackenzie'.

גדעון תדמור: אז צהריים טובים ותודה על ההזדמנות לבוא ולהציג את עמדתנו. כמי שהייתה לנו הזכות להיות בעצם מראשוני משק הגז הטבעי בישראל וגורם משמעותי בו, אנחנו חושבים שאי אפשר להפריז בחשיבות של הוועדה ושל המשימה שמוטלת על כתפיה וכדי להיות יעילים לאור לוח הזמנים שהוקצב לנו, אני אבקש מייד לעבור למצגת שהכינה חברת הייעוץ שלקחנו על מנת שתייעץ לנו בתהליך, חברת 'וודמק'. היא הכינה מצגת. בעקבות המצגת אנחנו נוסיף או נדגיש כמה נקודות נוספות. אני מקווה שנצליח להיכנס בלוח הזמנים שהוקצב לנו.

גבי לאו: Rather than try and present a summary of what we did in the form of a report, what we wanted to do is try and pick up on three key areas that we thought was worth a discussion. The first focus is around the resources and the realization of Israel's resource. The second is around

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security of supply for Israel and the third is around the development of an LNG project of what's needed. First of all, looking at that realization of reserves potential and the instigation of competition within the market. I guess when you look at reserves, either being discovered and the remaining potential reserves, the one key (not clear) that strikes you is the sheer scale. The scale of resources in Israel dwarf the domestic requirement and I think one of the key issues that we see here is that, in order for these identified prospects and yet to find fields to be discovered, there needs to be incentives from the industry to actually go and explore for them. With a 100 million dollars per well, to drill a well in the deep water, there needs to be a clear path of monetization for those gas reserves. Otherwise, those exploration dollars will go elsewhere where the path for monetization is clear. I don't think anybody

doubts the technical prospective of Israel. I think what they're concerned about is clearly the commercial pathway for the monetization of the gas they discover. And that leads us on to competition at the market. We've taken two examples that really represent the ends of the spectrum. In Bangladesh, you've seen a situation where there's no commercialization pathway for gas. The gas price is low, the domestic demand is relatively low and the prospects for export are none existent since the government decided not to. As a result, the companies that were there, the key ones, the (not clear) the players with international experience have either just hung around to meet the domestic demand or either left. Compare that with Western Australia, where the incentives for exploration and the attractiveness, vis-a-vie the technical attractiveness and the commercial attractiveness, has increased the level of

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competition in the market. The number of companies entering Western Australia over the last 10 years has increased dramatically. And the reason for that is, companies have been able to see their competitors going for the market, explore for gas, find gas, be able to commercialize that gas through LNG projects and the domestic market and actually make a visible return. That success has actually brought in more companies looking for those opportunities. As an advisor, we spend a lot of time with companies trying to identify how they may enter the Western Australian gas market, because it's such a (not clear). If you take this prospective down to Israel, it's estimated that about 2 billion dollars of expenditures required to fullfill those (not clear) obligations over the next couple of years. Israel is going to struggle to attract that investment unless companies can see the monetization pathway that they would

see. I think there is a great deal of confidence around the technical potential of the Israeli offshore. I think what people worry about is how do you actually monetize that gas. Talking to companies around the world, as we do, as with 'Mackenzie', what people are saying to us is 'fantastic. 'Leviathan' basin, it's so exciting to see what's going on but Israel will never export gas and as far as we are concerned, until that happens it doesn't really come up in (not clear) because the commercialization of that gas is not going to be possible'. Looking at Israel's (not clear) situation today with one dominant operator, trying to look at this in the context of how gas markets have evolved through time. If you look at Israel at the moment you've got one dominant operator who has had most of the success but this is actually quite common in the development of gas markets and in situations like Thailand historically, (not clear)

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instrumental and had a unique position in the offshore in the '1970, when they discovered the large field, they developed that field and actually brought the gas to market. As soon as that happened there's a huge amount of interest in terms of other companies coming in. Once companies could see that the opportunity could be realized, then companies (not clear) behind. The EMP business is very much of a haired mentality, somebody goes out, does something innovative creates value and everybody follows him behind. In Malaysia, 'Shell' have a unique position in terms of the opportunity to discover gas offshore (not clear) and actually developed 2 LNG project off the back of it and that success actually instilled other companies to follow in behind, to take exploration (not clear) to take equity possessions and actually it was (not clear) who proved up the gas for the next project, because they were able to go out and replicate

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what 'Shell' have done and there was a number of other companies that followed them behind. In Mozambique, we've seen lots of success from (not clear) over 25 TCF proved up in terms of gas resources. Lots of excitement about that and lots of the majors are (not clear) crawling all over Mozambique, trying to see how they can get a position in that country. There's rumors of 'Shell' to be very close to getting a deal done in Mozambique to get involved in the LNG business. And you compare that now with Israel, nobody can question the prospectively and the exploration success that's been had in the 'Leviathan' basin. There's absolutely no doubt about that but, despite that success there's still limited interest from the (not clear) and really it is about the major (not clear) that we're considering, because these are the ones that have a critical mass, that have the capability to develop large scale export (not clear). So while

the 'Leviathan' basin is attracting a lot of interest from a technical perspective, Israel has not yet proved that it makes commercial sense for these big companies to actually invest and if you look in context, the geopolitical aspect of Israel really makes Israel start from a lower platform. It has one hand tied behind its back in a certain respect, relative to other countries, just because of that geopolitical element. So, in terms of making it attractive for (not clear) it's clear Israel has to demonstrate the gas can be commercialized. Moving on to the security of supply issue. We presented this chart actually in the form of (not clear). It was just to give an indication of how different countries have managed their domestic security of supply versus the realization of the resource potential. That's always the balance any country is looking for, is to make sure that it keeps the lights on at the same time as stimulating exploration activity

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so that the resource potential is achieved and we've got examples of places like Bangladesh where, it's really not gone well, exports weren't allowed, the stimulation with the ENP business was depressed and as a result they've actually not managed even to produce enough gas for their own security of supply. At the other end of the spectrum we've got somewhere like Australia which use a formal domestic market obligation commitment process which allowed it to manage the domestic market while at the same time, allowing exports and allowing the development of the LNG business and as a result, a huge amount of activity, a huge amount of exploration done and the reserves proved up while at the same time ensuring that security of supply. Importantly, very few countries have had formal policies of domestic market management in place. Australia is actually one of only a few

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countries where they formally taken approach to manage that domestic requirement.

שאל צמח: And your implying that other courtiers are doing it informal or not doing it at all?

גבי לאו: Yes, more informal. More in terms of actually trying to make sure that the domestic market is attractive enough that suppliers would say 'yeah, we'll happily supply for the domestic market versus go to export'. So, there's a degree of indifference and it's just managing it in a more informal manner and what you'll see about Western Australia is that the fact that Western Australia has actually showed a great deal of flexibility around how it's gone about the DMO and as a result been able to manage,

שאל צמח: DMO, meaning?

גבי לאו: DMO – Domestic Market Obligation. We'll come back to that point. This is just an illustrative example of how the DMO works. Essentially, anytime somebody goes out and explores for gas,

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finds gas and thinks that they've got enough for an LNG project, they go to the Western Australian government and they say 'we wish to built an LNG facility at a specific location'. As part of that commitment to allow that to be developed, the Western Australian government insists that up to 15% of the gas that they produced from the export project is reserved for the domestic market so, effectively that allows the project to receive the permits associated with the development of the LNG facility. If you look on the right hand side of the chart there highlights what typical project might look like in terms of the (not clear) and the gas that's allocated to export and the amount that needs to be allocated to the domestic market.

שאל מרידור: How is it done?

גבי לאו: Let me come to that. On the left hand side, obviously you have a situation over the last few years where there has been lots of new LNG

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projects being put forward. The danger of this is that all this domestic market obligation gas ends up being far greater than the market actually requires. This is a relatively small market and so it doesn't take long before that happens so fundamentally, there needs to be management of this domestic market obligation, this 15% or whatever that's allocated, because otherwise you end up with more gas than the market needs and gas essentially doesn't flow. If you look in the next slide how they've done it. Take, for example 'Gorgon', what they've done is to be able to take a more flexible approach, to look at how the domestic market obligation sits with the project, in terms of does it actually make the project un-economic? 'Pluto' is a good example, it was a situation where (not clear) 'look, if we supply 15% from day one our project will be un-economic and so, we need to actually have a situation where that's deferred' and as a result

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'Pluto' will deliver 15% but it won't be until after 5 years after production has started and they'll work again as to whether that makes sense. The (not clear) of that to make sure that that project is still commercially (not clear).

שאול מרידור: That's 15% of the annual (not clear) or is it 15% of the entire reservoir?

גבי לאו: It's both. They haven't been quite so explicit. In certain instances it's around 15% of production, in other instances it's been 15% of the reserve and it's being dependant on what they needed at the time. So, with 'Gorgon' as an example, around about 10% of the production where (not clear) reserve for the domestic market and that was because that's all they actually needed of the 22 TCF. Subsequently, they've discovered another 33 TCF but the DMO is still the same. The actual volume that's been dedicated to the domestic market is still the same so in fact, the DMO now is much smaller, it's maybe 4% or 3%.

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שאל צמח: What was the mechanism? Did they actually consume that gas or take it to a (not clear) facility?

גבי לאו: 'Gorgon' hasn't come on (not clear) so what they've done is they've said 'look, based on our demand profile, we will need 'Gorgon' probably between 2018 and 2022, you need to be prepared to supply a certain amount of volume at that time' and that's the mechanism they've done. There will be discussion around what the timing of that will be, that will be incorporated into the 'Gorgon' development plan.

שאל מרידור: Can it be that the 'Gorgon' will start production on 2016 without any prediction to the domestic market and then start the domestic market in 2018?

גבי לאו: Yes, absolutely. Just in terms of what 'Pluto' will do, 'Pluto' will start up at 2014-2013 and will produce LNG for 5 years and then it will have a domestic requirement so, we'll have to up

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its production level. But again, there will be flexibility shown because again, if that makes huge problems for the project in terms of commercial viability, what the Western Australian government wants to do is to stimulate the export of the development of projects at the same time as managing so not killing the one with the domestic market (not clear).

שאול מרידור: Every project has some other arrangement of the DMO? It's not a rule for everyone, for every reservoir you make a different rule, one is 10% one is 15%, one is 4%?

גבי לאו: Yes, absolutely.

גדעון תדמור: It's a cap. 15% is cap and it's manageable in a sense that it could be lower than that on a specific project based on its economy of scale or requirements of the domestic market and secondly, it could be also managed through the duration of the project, which means in year one

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maybe it's zero and later on, when there is a need, it's 15%.

אלינור קרמז: But it's really a collaborative approach.

גבי לאו: Yes, it's a collaborative approach with the company to make sure the project isn't severely damaged in terms of economics, at the same time making sure that the demand is met. The concern of the Western Australian government was that, all these LNG projects would go ahead and everybody will say 'the hell with the domestic market, we don't need to do that'. So the driving force was to make sure there's always enough gas (not clear) available for the domestic market and that domestic market (not clear) uncertainty around some of the mining activities that go on there, so they needed to have the flexibility within the system to say 'actually, we need that gas a little bit earlier so before you take your development plan, we need to move that gas forward or back or however'.

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שאל צמח: Where there any other rules regarding the prices or other terms?

גבי לאו: No, not really. In terms of the fundamental, that's all generally negotiated. The gas price will be what it will be and so obviously, supplying the gas into the Western Australian market would be whatever a contractive price could be agreed. Clearly, if there were five people all trying to supply gas to one buyer then it would have an impact on the eventual price but, fundamentally there was not distinction of 'you will get a certain gas price (not clear)' the gas price in the domestic market will be what it will be.

דיוויד אהרון: The commitment, is that in the production (not clear) or in the development (not clear)?

גבי לאו: It's a good question. I don't know. It's a state regulated thing, it's not a (not clear). I don't know where it sits off the top of my head.

אלינור קרמז: It's when they get agreement for the,

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גבי לאו: I don't know, there are different types of licenses in Australia and I'm not sure where it's sits in. I suspect it's in the production license but I'm not sure. So in terms of other projects (not clear) it looks like it will probably supply about 13%, although there's still some debate going on around that. So, that degree of flexibility around timing and arrant volume as part of the negotiation, part of the discussion but it sais, before you go exploring, if you're going exploring in Western Australia, be prepared for 15%, but it probably might be different from that (not clear). And then, other things they've done in terms of flexibility to help the actual value, if you like, (not clear) government is to offer different levels of flexibility about the domestic market obligation in kind, for example. So, investing in (not clear) gas developments will reduce some of your obligation or investing in domestic gas targets of

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the exploration or investing in gas storage or lots and lots of different ideas about how you can essentially pay for your DMO in kind, if it's not actually (not clear). The key message I guess is one over mostly about flexibility in timing and volume has allowed or will allow the Western Australia to manage that demand going forward. This is just starting so it's not really a proven technology yet, (not clear), but it will allow them to manage that demand going forward.

שאל צמח: Do they have any specific obligation of the state purchasing this amount of gas?

גבי לאו: No, none. The state takes no liability, quite rightly, in the fact that what they are interested in is to make sure that the gas is available to the benefit of the domestic market and therefore, if it's not required then that gas can go elsewhere but it's a prediction of (not clear) you are signing long term contracts with off takers so, that has to be done ahead of time and so, once

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those contracts are in place the obligation sets with the off taker.

שאל צמח: This is why I asked you about the conditions of the purchase because, if you do not set the specific conditions and terms of purchasing these amounts then the prices, for example, would be equal to the export. Otherwise, you will not keep that amount for the domestic market.

גבי לאו: The fact is you are obliged to supply that so you must make it available if it is required in the market so, that's the first thing. The pricing of it will be dependent on how many other players have actually have gas available. Because there's lots of other players who just supply the domestic market, like 'Apaches'. They don't get involved in LNG, not until recently, they just supplied. So, there's gas coming in from multiple sources. If there's lots of people looking for that market then that will have an

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impact in driving the price down, if there's not, then it will drive the price up, it's just market fundamentals. That happens today, it's happened for the last 20 years. So essentially, all the government's doing is making sure that if there's a market for that gas, that there is potential gas available for that and it's up to the supplier to make sure that he's actually got that commitment in place to have that gas (not clear). So the liability doesn't set with the state, it sets with the off taker.

שאל צמח: So he has to sell this amount of gas and he has to set the specific conditions that will allow him to sell this amount?

גבי לאו: Yes. He has to have the facilities and place that will allow him to sell that amount gas into the market.

שאל צמח: And the terms and conditions?

גבי לאו: Yes, absolutely. And he will set that with the off taker and there are numerous off takers and in

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some cases it will be a good price, in other cases it won't.

גדעון תדמור: It's not the commercial term of selling the gas but to put in place the infrastructure needed in order to insure the ability to supply the gas. The prices are negotiated, obviously if you have a situation in which you have multiple sources of gas including players which are only for the domestic market, because they don't have the critical mass that enables them to launch and LNG facility.

דיוויד אהרון: But if you are a buyer and you know that the company you're buying the gas from has this obligation, that's going to influence you,

גדעון תדמור: Yes, sure.

דובר: But do they have to do it or do they have to offer it?

גבי לאו: If there's no market for the gas then there's no market for the gas. With 'Mackenzie' (not clear) the Western Australia situation is not the

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similar to what is the situation you find in Israel. Relatively high potential reserve base in a relatively small market and we've looked at building a model around the development of a model it would see what sort of DMO requirement would be needed to meet the expected demand, based on the government's demand figures and we've also taken the low case and the high case, what sort of level of domestic market obligation would be required from those reserves in order to meet that domestic requirement. Looking at that, again, what is the security of supplies, at 15 years of supplies and 20 years so, we've taken two options here just to look at that. And in terms of the level of DMO for fields that are already discovered, like 'Leviathan' and fields that will be discovered in the future, hopefully, you end up with a situation where the DMO for only 15 years of supply from discoveries and for new

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gas, it sets the need to be somewhere between 2%-8%, so, a very manageable scale. If the figure was 14% the problem is that then critical mass (not clear) becomes almost impossible, or if it becomes 16% it becomes impossible. What we're interested to see was is this level actually in line with that 5%-15% that's manageable within the context of commercial development and the allowance of an export project, which you'll see later kind of has to have that critical mass.

יוסי אבנ: One important assumption here, our assumption is that 75% of 'Tamar' will be allocated anyhow to the Israeli market. So, based on that assumption this is these are the numbers.

שוקי שטרן: What is YTF?

אלינור קרמז: Yet to find. It's actually the identified prospects, it's not the entire yet to find, just the identified prospects.

דובר: How much is it, TCF?

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אלינור קרמז: 20, I'll give you the exact figures.

גבי לאו: So if you look at the figures you're looking at sort of 20 years of supply, clearly the DMO needs to be higher, more reserves need to be allocated.

דיוויד אהרון: Sorry, I didn't understand the part that you just mentioned about 'Tamar' being included somehow in this analysis. I mean, you're retrospectively bringing in stuff that is already,

יוסי אבנ: What we say is basically 'Tamar' like now, signing the contract to supply gas to the Israeli market and we anticipate that anyhow 70% of the reserve in 'Tamar' will be allocated to the Israeli market even contractual so, based on that assumption what we say is that 75% from 'Tamar' is already allocated to the Israeli market, 25% is for export and in addition to that, this is the DMO model that will present (not clear) any other discoveries,

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דיוויד אהרון: This is for future.

יוסי אבנ: This is including that 'Leviathan' and other discoveries,

דיוויד אהרון: No, but it's excluding.

אלינור קרמז: Excluding 'Tamar' and 'Noa'. It's 690 BCM.

גבי לאו: (not clear) the model (not clear) to ensure that the domestic demand is met under the low base and high case scenarios, using the resources you have available so either 'Tamar' being included in that in meeting part of that demand and then, things like 'Leviathan' as part of the other discovered and then new discoveries they are yet to find. That assumes the DMO period starting in 2013 and then being reviewed in 2018 to say 'O.K., what discoveries have been made and how would these be allocated in ensuring the future security of supply of 20 years.' One of the points that we raised in the report was the development of infrastructure associated with the growth of a gas business and one of the points that we

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wanted to highlight is that currently, the Israeli market is pretty heavily exposed to one receiving point, not dissimilar to a situation we've seen in Australia where the failure of that point has catastrophic effect. I can imagine that the government of Israel is very keen to see a more (not clear) and stable environment for the supply of gas into the market, not just relaying to one single point. What we were trying to draw the attention to is, as the scale of a gas industry builds, both in terms of exports and domestic, so does the infrastructure. More fields are discovered, if you look in the distribution of prospects and blocks of how you ultimately what end up happening is field are discovered that connected into infrastructure, that infrastructure receiving points, those receiving points become, hopefully numerous along the coast, increasing the stability of the system and increasing the level of interconnectivity between

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the different pipeline systems, such that one pipeline goes down you actually have the redundancy in the system for it not to be a problem. The UK is a great example of a situation where the development of numerous pieces of infrastructure have given a considerable stability so that people could shut down a pipeline for 6 weeks and it has no direct impact on the gas supply into the UK and into Europe. So ultimately (not clear) is the development of that infrastructure is really dependant on the ability of companies to explore, to find and to develop the gas and that has to be driven or underpinned by the export otherwise, exploration stops ineffectively, infrastructure gets governed purely by the cheapest possible option. Looking at developing a gas export business and specifically, looking at LNG export, how do you go about doing it and what is required? Many times we've been

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looking at this in the context of it's a case of, if it's assigned for export it's easy. It's not. Exporting as LNG is a highly competitive business and Israel will need to compete in that global supply place. Looking at (not clear) associated with LNG the one striking feature over the last 5-6 years or 6-7 years now, is the escalation in costs. Costs have gone up probably about 4 fold in terms of the cap ex associated with LNG development. Used to be round about \$300 a ton and now we're up as high as \$12,000 a ton for conventional LNG developments and one of the drivers around LNG has been economies of scale. Because a large proportion of the cap ex associated with a plant is relatively fixed, i.e. a jetty. If you're building (not clear) for a 2 million ton facility it's pretty similar to the jetty you're going to build for an 8 million ton facility. These costs are pretty much fixed and as a result, when you build the 2 million ton

facility the cost per unit is much higher and as a result the economics becomes significantly more challenged and if the economic is significantly more challenged, buyers start go get nervous about the overall economic viability of the project and that's about their supply being potentially disrupted. So, if you look at the overall costs position, it's not an accident that projects tend to look pretty similar. In the last 3 years we've seen 7 on shore projects taken FID and 5 of them looked pretty similar: 2 chain facilities with capacities ranging from 7-10 million tons and that 7-10 million tons is now the kind of level of economies of scale to get on the cap ax and the capability of marketing that gas in the LNG market. If you build a 30 million ton facility from scratch, clearly the marketing challenges of getting rid of 30 million tons are huge. Doesn't mean you can't do incrementally but in one (not clear) so, it's typically been

found that 7-10 million tons is the scale on which companies feel comfortable and one, they can market it and two, they can achieve the economies in scale.

שאל צמח: What about floating LNG?

גבי לאו: I'll just come on to that now and just in terms of some of the challenges for floating LNG. Fundamentally, Wood Mac sees floating LNG much more as a niche play. It's not a solution for large scale export of gas. It's a niche play that fits into a specific set of circumstances. As in any new technology or different technology, there are concerns about capital cost. Will it come in on cost? People have thrown out some very low numbers. Will they actually be able to achieve those numbers in terms of capital cost? And then overall reliability, lots of concerns about will I have to shut down when a storm blows? How long will I have to shut down? If you are a buyer, that becomes a real issue

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because suddenly now (not clear) turn up. So there are real challenges across the board for floating LNG that makes it much more of a niche play. If the challenge is around the technology then (not clear) challenges in financing because lenders tend to be very conservative, they like things that have been done before so it makes a whole lot of sense for lenders to be much more comfortable with conventional systems that they feel comfortable with. Potential customers will attach a greater degree of risk to a floating system and therefore will look for some sort of price benefit, flexibility benefit that they wouldn't necessarily be able to leverage in an onshore facility and then it's just the size and economies of scale that they tend to be smaller projects, 2-3 million tons of capacity on a barge. The 'Shell' one is the largest one and it could be one of the largest floating structures ever. These tend to be much smaller than their onshore

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equivilers and they don't benefit from the economies of scale. Once you've got one you don't get the benefits of a site when you add another and another because, if you had one train and you build a jetty for the second train you won't need to build a jetty. For the third train you probably don't need to build a jetty so, in essence, in a floating system your adding (not clear) facilities one beside the next and they cost pretty much the same, so you don't get these economies scale by putting one beside the other, which again, effects the overall economics. You're throwing away value effectively. If you looked at doing a 10 million ton floating facility of 5 (not clear) side by side, it just makes loose end because you're just throwing away value.

שאל צמח:

What will be the scale in terms of a land consuming for those plants versus onshore

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plants, the size of the needed land to be allocated for those plants?

גבי לאו: For an equivalent floating plant? I don't know, that's a good question.

גדעון תדמור: אם אתה רוצה לעשות חשבון למשל, ל-3 טריינס, For 3 trains of 5 MTPA15, you'll need something like 1,000 dunams. A floating LNG, each one is about 2.5.

אבריאל בר יוסף: אני, דרך אגב, לא מסכים עם מה שנאמר פה.

גדעון תדמור: לגבי מה?

אבריאל בר יוסף: Floating LNG כל הנושא של ה-.

דובר: אתה לא חייב להסכים.

גבי לאו: One of the questions that we wanted to address was what are the structure (not clear) that you need to have for an LNG plant, in order to (not clear) marketing? There's lots of things that you can do with an LNG plant (not clear) structure, but in terms of being able to market the gas, what do you need to do, particularly to make buyers feel comfortable that they're actually going to get their supply? The first thing is,

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which you see across the world, is the control of the LNG (not clear). It's extremely important that that's in the hands of the upstream players. Buyers want to see somebody who's got skin in the game as in operating that plant. Because fundamentally that plant is the bottleneck for the whole value chain, if the plant stops working the buyer doesn't get his LNG, the producer doesn't get any revenue. So, if you have the guy who's got the gas and the ground that's producing the gas involved in the plant, he has a vested interest to be sure that gas it produced and he will make every assurance to insure that that thing produces for 360 days a year. There is a significant requirement for a creditable and capable operator. We go around and talked to a lot of the buyers, we work with a lot of the buyers and one of the key messages when they are evaluating projects from around the world is, it's got to have a credible operator, somebody

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that they believe who has the experience and capability to actually deliver in the (not clear). To take an example, there's a project in Western Canada that's currently marketing gas and one of the comments that we've had from the LNG buyers is they are not credible, 'the people who are operating the plant are not credible to us and as a result, the risk is too high. We don't see them as capable and therefore the risk is too high, therefore we're not really interested in buying'. The universe of credible players is pretty limited and it's restricted to a number of the main upstream players, the 'Shell', the 'BT' etc. One thing is clear is it cannot be bought in. Lots of people have proposed projects where they say 'we'll get one of the engineering firms to come in and build that and operate it for us'. That has never worked and the buyer's still very uncomfortable with (not clear) that's not one of those core players in terms of (not clear).

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Governments do and may own a stake as an investor. From a buyer's prospective, buyers are comfortable that governments are involved in projects but it can't be having control. That comes back to this point and comes back to this point which is, it needs to be somebody that they feel comfortable has the experience and capability and the drive, the necessary incentive to insure the project continues. But typically you see projects the government is taking anything between 0%-20% in the plant and the motivation for that quite often in developing countries is just perhaps the lack of trust around the operation. Wanting a seat at the table make you sure they understand what's going on at the facility etc. there's not really much of a financial incentive. These are huge amounts of cap ax, in certain instances the state maybe gets (not clear) or something like that, but the investment level is high and it's a utility

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later returned generally. So from an investment stand point, it's not really necessarily a great investment because it is merely a piece of (not clear) that produces the LNG. It's a piece of infrastructure. One of the key questions we thought about was that non-discriminatory access to new capacity and a lot of people have fairly suggested that in order to make sure that people who have small discoveries in the future get access to future facilities, that the government must control that through the control of the plant. But actually, if you look around the world, this happens in a lot of places and it's managed through regulation. Take a step back a minute and think what does an LNG project need to be financeable and to sell its gas? To reach FID you need to sell all the capacity. LNG plants don't operate with spare capacity unless there's a shortfall of gas for some reason as you see in some countries.

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Projects have developed on the basis that all the available capacity is used. These are huge (not clear), particularly in recent years as costs have gone up you can't afford to sit and have 20% spare capacity in an LNG facility. So they need to have that capacity full and they need to have most of that volume contracted to long term off takers for it to be financeable. That's the conventional approach, that's what happens in the industry. You can't afford to have redundant or spare capacity then more than a few percent, so as such there's no real potential for open access on a project (not clear), because there is no spare capacity to have as open. As a result, once a project is taking FID and the financing place, the buyers of this place,

פרופ' יוג'ין קנדל: Excuse me, what is FID?

גבי לאו: Final Investment Decision. So that's the point of which they start actually (not clear). Once a project takes FID there's limited scope to

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change the commercial structure. You can't suddenly say: 'actually we're going to take a new supplier in' or 'we're going to do something different'. Because fundamentally, the financing that supports it and the off take agreements that support are governed by a very (not clear) view of how that project is going to deliver. But regulation can insure that access for new discoveries can be achieved in expansion projects or new projects beyond (not clear). So, if you have the appropriate regulation as many countries do, and we'll go and look at Trinidad in a bit more detail, you can make sure that that gas which is discovered, small discoveries over a period of time, have equal opportunity to access, to supply and LNG plant and sell that LNG. If you look it's been going on in Indonesia for over 30 years. There have been people been coming along with gas reserves and putting them in to packages of supply and in Trinidad they've been

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doing the same thing and we'll take Trinidad as an example in the next slide. It's an evolutionary process in Trinidad. It's 3 projects, 2 and 3 are one actual project. In train 1 they started and BP had a lot of discoveries of gas, they were pretty much on their own, the rest of the players had some gas but they were supplying it to the domestic market. They decided they have this gas, there were significant volumes of it, they had enough for an LNG project, they put together a company to own and operate the plant, which was actually consistent of some players who didn't have any equity gas but who had exploration possessions already in the country who wanted to be involved and BG got involved because they actually wanted to see what was going to happen for the next train and the (not clear), so they wanted a sit at the table. The simple (not clear) was (not clear) of one player goes into a plant

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that's developed and lead by BP and then subsequently sells the gas on to consumers. By the time you came to 2002-2003 lots of more people have had exploration success. BG and East coast (not clear) and BG again with other partners and North coast marine had had considerable exploration success, driven (not clear) by their success of commercializing the gas as LNG, so that drove BG to start really (not clear) up exploration activity. By the time they got to 2002-2003 they were in a position to actually say 'we've got gas to go into a plant'. At the same time BP also had lots of more gas to go into plant. The government regulation said that they had to put that gas together and what came out of that was trains 2 and 3 where you had BP supplying gas, BG (names). The project was run by the key upstream holders and sold gas to potential or to the buyers, in fact, to themselves (not clear).

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שוקי שטרן: Except of the jetty, what was united? Every train is separated so, is there another infrastructure except for the jetty,

גבי לאו: Yes. There are some pieces of infrastructure that are shared between the different plants but it's fairly limited. Most of the sharing is a jetty and there's just a transaction between the entities to allow for that, the costs.

דובר: Also operation and the management and maintenance.

גבי לאו: Yes, absolutely. Atlantic LNG2 and 3, Atlantic 4 are different companies, different entities but, yes, absolutely, there's a sharing of capability around that to make sure because BP is a major share holder in (not clear), BG is a major share holder. The only difference here is, the government took a small stake in the first plant and GDF (name), because they were an off taker wanted to take a stake but by the time they got to the later trains they didn't want to take (not

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clear). Every supplier was offered an opportunity to take an equity stake so people at (name) Canada were offered to take a stake in the plant but didn't want to.

פרופ' יוג'ין קנדל: What you're showing is that there is a large number of large (not clear) that were holding positions of this. What would have happened if in Trinidad there was BP and a bunch of small players, each of whom had a right for a small exploration? Would you predict that it would have been similar (not clear)?

גבי לאו: I am pretty sure. At the time BG wasn't a (not clear), BG is a considerably larger company now than it was in early 2000 but yes, it would have. What the government wanted to make sure was that the guy who goes out and explores and finds a 1 TCF gas field has as much right to bring that gas to market as anybody else and that was the main driver of the commercial structures that

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(not clear), in fact in these trains it was a (not clear) facility.

פרופ' יוג'ין קנדל: But this guy may not have the capital to take 25% stake,

גבי לאו: That's fine, he doesn't need to. For example, if you take (name) Canada, they didn't want to take a stake, they got better things to do with their money. They're a relatively small company and they said, 'no. Actually, we'll not bother. We need to find a capital to develop our reserves but then, so does every ENP company but we don't want to be in the plant. We'll not bother'. And then, by the time you get to 2006 you've actually got 5 different blocks all supplying gas into a new project company called the LNG4. So, the government didn't need to own the plant. The government just said 'we have a regulation in place which makes sure that everybody has an equal right to access the new capacity'. And basically what happened here and here is that as

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soon as they started making discoveries they got together and they said 'right, how much reserves have we got? What can we do with that reserve? What scale have we got?' and in this instance rather than just doing one train they did two trains because they had enough gas combined to do the project.

פרופ' יוג'ין קנדל: You mentioned NGC, that's the national gas company and they don't have interest in exploration, they are only interested, גבי לאו: No, just in the plant and (not clear), it was just about being at the table and making sure they knew what was going on.

אודי אדירי: At first phase the facility was built with the option to be upgraded and have more trains in base?

גבי לאו: Yes. It was always the plan that they would expand assuming the gas was found.

אודי אדירי: (not clear) structure that was first built in,

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גבי לאו: It's a good question. I don't think so but I may be wrong there. I'm not sure whether there was over build at the LNG1 on the promise of share. But that would have been a commercial decision they would have made at the time.

יוסי אבנ: Udi, as one who have been there, it's a landlord model. Basically the government takes 1,000 and more then that acres and say 'O.K., this is allocated for train number 1, those are the guys who build the train etc., if they have an ability to share the jetty etc., they need to do that if not, the other one needs to build it'. It's not just a jetty it can also be storage. For example, if there's a place etc., that is actually from an economic perspective much more efficient and then they allocated a land for two trains and they say 'O.K., this is allocated land to two trains, who is the guy that has', but one important key message is you need to come with a third party aboard that says 'O.K, we have a

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reserve'. You cannot come and say 'I want to participate in the LNG plant' without having a reserve in place, even if you are intending to drill in 2 years time so, when they start with train number 1 anybody that had a reserve in place was able to come and say 'I want to participate in the LNG plant' and then they (not clear) that between the parties.

גדעון תדמור: The (not clear) or they (not clear) the capacity of,

יוסי אבנ: (not clear)

דובר: They gave an option to (not clear), you were not obligated to (not clear).

גבי לאו: But you have the right to the capacity rather than the ownership so it's about making sure that you're actually getting your gas (not clear).

דובר: Because you need to understand, not every ENP company wants to allocate the cap ax needed in order to take part of such a huge undertaking.

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יוסי אבנ: In LNG train number 4 it was a good example because there are many absent players that asked to be part of that and then they (not clear) the reserve but a few of them didn't want to participate in the LNG plant because it's an infrastructure kind of return and the government entity, the NGC, basically almost forced to be a part of that in order to bring the capital expenditure in order to build this LNG number 4.

דובר: But there wasn't a contract with the LNG plant?

יוסי אבנ: You don't have to take part in the LNG plant in order to sell your end.

דובר: But the LNG plant has to take your gas?

גבי לאו: Exactly.

דובר: There is no access but again, you plan it for the capacity that exists. That was the previous (not clear).

דובר: Let's say there are 3 major reservoirs and one small one which doesn't want to get in. He gets a

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contract with the LNG plant of the three other reservoirs building it, right?

דובר: And he pays,

דובר: With the cap ax in it?

גבי לאו: He pays a fee for access to the plant and having his gas turned into LNG by these guys. But the key reason, to be honest, BP would not be in (not clear) if it didn't have to be and the reason it has to be is because the buyers want it to be because they require that commitment of BP to be actually involved in the plant. Because they have so much skin in the game, if this thing goes wrong they lose a huge amount and the buyers want to see that kind of exposure. Key take away, just in terms of observations from us. There's no doubt, the exports on the (not clear) in order to (not clear) exploration. We've seen it the world over that if there is not a commercial pathway for the commercializing of gas then people will not invest in exploration dollars,

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they've got better things to do and in terms of realizing the full potential of the countries resources, it would happen. There are systems that can secure domestic demand. Those can be developed while maintaining attractiveness of explores and individual (not clear). We've shown I think that, you can meet the domestic demand while exporting and maintain commercial integrity of projects and I think here, to be candid, Israel has considerable geopolitical challenges. In the world of LNG supply, Israel is fighting with one arm tied behind it's back, just from a geopolitical perspective. Most of the players, most of the buyers have interests or relationships in The Middle East and Israel does present a considerable challenge. So, in terms of trying to (not clear) an LNG project, the key thing is for that project to be conventional is many aspects as it possibly can. New technologies, new things, new commercial

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structures just create problems within the eyes of the buyer and if the buyer's got problems already with buying from Israel and if he starts to see things like odd commercial structure or odd technologies, it's going to make him even more nervous. So, in order to make exports marketable, this needs to fall over the common route that the industry is comfortable with.

פרופ' יוג'ין קנדל: Monetizing the gas is clearly in everybody's interest. Can you tell me something about the way of monetizing through LNG, the advantages versus the way of monetizing through, let's say, exporting something else that is made out of gas?

גבי לאו: To be honest (not clear), the pipeline is always your first choice.

פרופ' יוג'ין קנדל: No, not the pipeline,

גדעון תדמור: Methanol.

גבי לאו: O.K., you've got a number of options. (not clear) what you've got. You've got conversion

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technologies and you've got physical technology. So you got LNG and you've got CNG. (not clear) work I absolutely believe they can but every time I ask a potential proponent or a developer of the big players they always say 'we can always find something better to do', and the proponents of it invariably don't have the financial (not clear) to do it. So CNG can work but in a small scale, it just tends to be a small scale so it doesn't monetize a huge amount of gas. Methanol sells into a very limited market. As an advisor to some of the big methanol companies, people like Methanix come to us and say 'where can I buy cheap gas?' and the reason they want cheap gas is that's what they need in order to compete. Methanol is a business which thrives on cheap gas and it has traditionally. Now, that price of gas will go up and the price of methanol will go up but that methanol market is dictated by about 3-4 players who can

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manipulate the price and do frequently. So methanol has certain attractions in terms of (not clear) but again, it's the scale, it's not that big. A world scale plant is about a quarter of the size in terms of monetizing gas then a world scale LNG plant.

אלינור קרמז: When we say cheap gas I mean like, Saudi has \$0.75 (not clear) gas, (not clear) chemical plants.

גבי לאו: So those are the options. There are other things like DME etc., but they all suffer from the same sort of problem. Ultimately, the first choice of having a monetizer is this pipeline and if not that then the next one is usually LNG and given the outlook of LNG pricing, which is pretty strong, our view is that for at least the next 10 years you'll see a relatively strong pricing and buy demand, just because of costs requiring that price to be out then, LNG is relatively attractive.

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אלינור קרמז: Actually, when we work with a government in a state that have discovered gas in terms of monetizing and the options, in terms of both economy and even employment, everything, it's always LNG or a pipeline and the chemical choices and stuff are always political.

דיוויד גילה: I'm not sure I understood you regarding the open access in your Trinidad example. Is there an open access to a new guy or does he has to participate in an expansion in order to get access?

גבי לאו: (not clear) expansion new project is actually just a sight issue. If, for example, the (not clear) after Trinidad won and they needed to put in the plant in a different place so it was a new project, the same rules would have applied, it just wouldn't have shared some of the (not clear) of the original plant, so it doesn't really matter. The key thing is that once a project has taken FID it is (not clear) by the lenders, the

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financiers and by the market that buy the gas. They don't want people play (not clear) take that gas out and we'll put this gas in with another supplier here. They want to know who's supplying it and the contract stipulates that in most cases. But whether it's an expansion or a new project, it's just 'the next project'.

דיוויד גילה: Yes, but there has to be some sort of economy of scale for the new project or whatever,

גבי לאו: Exactly.

דיוויד גילה: (not clear) I'm a small new guy, not large enough to make a new project feasible and I don't get access?

יוסי אבנ: If there's no one else.

גבי לאו: If there's no one else, but it's the same if you were operating on your own in the middle of nowhere. If you only had 1 TCF you wouldn't have an LNG project.

יוסי אבנ: So you go to domestic.

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גבי לאו: What's key to the government is optimizing the whole industry rather than optimizing a company portfolio. The governments are interested in saying what's the best for this whole industry and for the government, because if it's good for the industry it's good from a tax perspective for the government. Inefficiency means lower taxes so, essentially there's a vested interest that's making sure that the best thing is done for the whole. So if I've got a guy with a TCF and it makes good sense that he joins with 3 other people – that's the best idea. In Indonesia they've been doing it for 30 years.

דניאל: Actually there's a good example in (not clear) where they have an LNG export plant but they don't have enough gas for it. 'Shell' has not managed to provide gas. So, if somebody comes along that has an exploration success, (not clear) it can go, so obviously that encourages (not clear) that capacity is there and that's why

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BP is actually in (not clear), to fill more space (not clear).

גבי לאו: Yes, that's probably the only circumstance where capacity is available because actually they're short of gas and Egypt is the same. If Egypt had more gas they'd be putting more into (name) then they are currently doing but they are short. So if somebody came along and said 'hey, look, I've got volume' I'm sure the Egyptians would be delighted to let them in. (not clear).

שאול צמח: How do they finance it if they don't have enough gas?

גבי לאו: There is uncertainty around reserves and there was a period of time where it was almost about 'let's worry about it tomorrow'. The reserves came with a certification. 2 years down the line that reserve certification had dropped by 30%. Don't worry about that, we'll find gas. That's part of the reason why (name) took gas off the

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grid, was because no individual had enough gas to actually supply (name) on its own and it couldn't justify. Had to have the government to say 'here, we've got enough gas in the grid to make it worthwhile'.

יוסי אבנ: If it's not to the protocol, we can say, if it's O.K. with you about (name) and the LNG facility [REDACTED]. Because basically, they are working under capacity right now of 40%-50%,

גבי גולן: It's not right now, it's 5 years.

יוסי אבנ: For the past 2-3 years at least and they approached us trying to reach a direct agreement to supply gas from 'Tamar', 'Leviathan' to feed the gas in the LNG plant in order to make it efficient and work in full capacity. Obviously, there's a geopolitical challenge.

דיוויד גילה: The integration required between the producers and the LNG, can you clarify why it's required, how is it different than other cases of

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a middle man that owns infrastructure needed for buyers? Is it the ownership or the control, the financing?

גבי לאו: It's the control. It's ultimately the control that matters.

גדעון תדמור: הגודל של הפרויקט.

גבי לאו: And it's also that. That relevance of having some major liability. If that (not clear) BP gas sits in the ground, gas sitting in the ground for 2 years because your plant had an accident, the cost of that lost income is enormous so as a buyer I want to be sure that BP is incentivized to do everything they possibly can to make sure that plant delivers. I want to have maximum skin in the game that they (not clear) that plant. We've worked with a lot of utility companies who've said 'yes, we skin opportunity to go out and play the role of this player here, the owner and operator of the plant' and not one of them has managed it. Because every time they go they said

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buyers just wouldn't touch you. Asampra, for example, the American utility, have looked at trying to get involved and the guy saying (not clear) because we can't take the risk that you actually don't know what you're doing and the buyer certainly can't take the risk that you don't know what you're doing. It's just one of those things, it makes a whole lot of sense. In (not clear) gas terminals, typically companies have actually been comfortable with utility type companies operating them but not on (not clear), because there's too much risk. A (not clear) gas terminal doesn't work well, great, you just take your LNG tanker to somewhere else, if this doesn't work your gas stays in the ground and the loss of income is enormous.

פרופ' יוג'ין קנדל: Do you have any examples where the LNG plant is not (not clear), successfully?

גבי לאו: It depends on ownership and operatorship. In certain instances like Oman, for example, the

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government owns 51% because that's a legal stipulation that they have to own a majority share holding, but then 'Shell' (not clear) owns the rest of it. In Indonesia, the government owns a 100%. Why? Because it's illegal for foreigners to own infrastructure. They don't do anything, they actually have no role to play because the operator actually does everything and the operator is (name) BP, Chevron. So, there are circumstances where there's maybe a less (not clear) structure around the vertical integration but there usually legal stipulations and the buyers have a time to get used to them because, basically the operators have said: 'look, we are in full control here' and the government has said 'yes they are' and backed them up because (not clear) used to go out to Japan with the operator who was generally (none) at that time and just say 'guys, you're dealing with the right person here, it's (name), they control everything.'

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פרופ' יוג'ין קנדל: There are no examples in which there's a commercial structure that is independent?

גבי לאו: There is another commercial structure which is integrated and this is quite a common structure and there's a lot of advantages and that means that an LNG plant becomes just another piece of infrastructure of the upstream project, like a pipeline or a platform. It's within the (not clear), it's good because it's nice and simple, you don't have internal transfer pricing, the Qatari projects, most of them are integrated and they basically just have a (not clear) fence around the (not clear) and that creates the opportunity for the government to (not clear) a considerable amount of rent from the LNG plant, because it's sitting in a 60%-80% tax environment whereas, in a segmented structure (not clear) facility it will be in a much narrower one.

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שאל צמח: O.K., due to the tight schedule we will finish at that point.

גדעון תדמור: טוב, תודה רבה. רק אולי כמה מסרים מאוד קצרים. ראשית, למרות שבחוק אין מגבלה על ייצוא ואנחנו לא נכנסים כאן בכלל לזירה המשפטית, ברור לגמרי שיש כאן רצון לקבוע איזו שהיא מדיניות שבעצם תגדיר בצורה וודאית לשוק, גם השוק הקיים וגם השוק העתידי, איך מתייחסים לנושא הייצוא. אנחנו חושבים שאם רוצים לפתח מודל כזה המודל הזה צריך להיות מודל אינטגרטיבי, בגלל שאי אפשר להפריד את החוליות, זה צריך להיות מודל מאוזן, בגלל שצריך לדאוג ל- **Security of supply** מצד אחד ב-**domestic market** מצד שני, להבטיח את המסה הקריטית הדרושה על מנת לפתח מרכיב של ייצוא ופעם שלישית זה גם צריך להיות דינאמי. זאת אומרת שאם יש התפתחויות, יש איזו שהיא **milestone**, כל תקופה מסוימת שבה בודקים בעצם איפה אנחנו נמצאים, מבחינת ה-**Supply** המקומי, מבחינת הצריכה המקומית וכמובן גם מבחינת השוק הבינלאומי. כלומר, אלה הם מרכיבים שלדעתנו הם מרכיבים חשובים. בישראל היום אנחנו נמצאים במצב שבו יש יתרון גדול מאוד לסיטואציה בה אנחנו קיימים שאנחנו יכולים היום לבוא ולומר של-20 שנה, שזה איזה שהוא טווח אפילו

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הייתי אומר מעבר לאופק, אפשר להבטיח את האספקה הדרושה למשק הישראלי בהתבסס על תגליות קיימות, על חלק מהתגליות הקיימות, אפשר להבטיח 20 שנה. אז נשאלת כמובן השאלה מהו האופק הנוסף, כאשר מבצעים את הבדיקה האיטית מעת לעת, מהו האופק הנוסף ומהי המגבלה האפקטיבית שהיא מגבלה אפקטיבית כ-**cap** שאותה אפשר להוריד ולנייד גם בזמן וגם במרחב, כמו שהוסבר קודם שצריכה להיות לאחר מכן ולנו נראה שהמספר הראוי, על בסיס העבודה שנעשתה, ש- 12% כמגבלה אפקטיבית היא מגבלה שיכולה להיות רלוונטית כשגם במסגרתה צריך לשמר כמובן גמישות וגם אותה אפשר לשנות אבל כמובן, לשנות קדימה ולא לשנות אחורה. צריך להבין שפרויקט LNG ואני חושב שכאן היו השאלות בסוף המצגת, הוא פרויקט מאוד מאוד כבד ומורכב אחרת הוא לא מתקיים ולכן יש פה את החיבור הבלתי ניתן להפרדה בין שלוש חוליות: החוליה של ה-**upstream**, החוליה של הפרויקט עצמו והחוליה של ה-**off taker**, כי בסך הכל על בסיס ההכנסות מה-**off taker**, בעצם מממנים את כל הפרויקט והקונה רוצה שה-**upstream player** יהיה לו **vested interest** בתוך המתקן והוא יפעיל את המתקן כי כל נזק שייגרם בהפעלת המתקן בעצם חוזר מייד אליו ולכן, שלושת החוליות

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האלה, למרות שקיימת גמישות מסוימת של הכנסת שחקנים, הן חוליות שאי אפשר לנתק אותן. ברור לגמרי שאם נותנים כאן אופק אז האופק הזה הוא אופק של ייצוא, אופק של מסחריות כמובן, זה מה שבעצם ימשיך ויאפשר לקיים את המעגל הזה של אקספלורציה, פיתוח והפקה. מעבר לזה שגם בעבודה שהוגשה בכתב הראינו גם שמבחינת המדינה ברמה המאקרו כלכלית נתנו סכום של כ-100 מיליארד דולר יתרון כלכלי למדינה ואלטרנטיבה של ייצוא מול אלטרנטיבה של לשמור את הגז באדמה, כשאנחנו טוענים שגם לא יהיה גז באדמה כי גם לא תהיה בעצם מוטיבציה להמשיך לחפש. בהקשר הזה אפשר להגיד שגז באדמה זה לא ביטחון אנרגטי. דיברנו קודם על מצרים, מצרים היא דוגמא קלאסית. למצרים יש כמות מדווחת של **BCM 1,600** של תגליות וחסר להם גז ב'דנייטה'. איך קורה המצב האבסורדי הזה? נורא פשוט, אף אחד לא משקיע בפיתוח. אף אחד לא משקיע בפיתוח ב (לא ברור), אף אחד לא מקים תשתיות ולכן, גז באדמה הוא הדבר הכי רחוק שיכול להיות מביטחון אנרגטי והיום כשאנחנו יושבים כאן וכש'ים תטיס' נמצאת בירידה ואנחנו מדברים על אולי כל מיני פתרונות ביניים כולל (לא ברור) להביא **LNG** יקר, זה הכל בגלל שהגז באדמה היום של 'תמר' ובוודאי של 'לוויתן' לא מספק שום ביטחון אנרגטי כשבעצם אי אפשר לפתוח את השיבר

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ולראות את הגז הזה זורם. ואני לא מדבר כמובן על תעסוקה, שמדובר על פרויקטים בהיקפים חסרי תקדים במונחים של המדינה, השקעות בתשתיות ויתרונות נוספים. עוד נקודה אחת שאני רוצה לגעת בה זה הנושא של ההיבט הגיאוגרפי-פוליטי שבעצם לא הצגנו אותו. אנחנו חושבים שיש היבט גיאוגרפי-פוליטי יוצא דופן לנושא הזה של הייצוא, גם ברמה של המשחק האזורי ויוסי קודם הזכיר לא לפרוטוקול אפשרות אחת או פנייה אחת שהייתה אלינו. אנחנו יודעים היום שירדן זקוקה באופן, הייתי אומר כמעט נואש, לגז טבעי. אנחנו מדברים כמובן על הרשות הפלסטינאית. יש כאן חלון הזדמנות שהוא אזורי. אבל אם אנחנו מדברים על האזור הרחב יותר, אנחנו מדברים על החיבור בין ישראל לקפריסין, ליוון, ציר שהמדינה או הממשלה מנסה היום לעודד אותו ואנחנו מדברים גם כן על שווקי הייצוא במזרח, על סין, על הודו שזה שווקים צומחים בצורה בלתי רגילה שמשוועים למקורות חדשים של גז שמגיעים ממקום שנחשב יחסית לאלטרנטיבות מקור, הייתי אומר יציב, של גז טבעי. כל הדברים האלה הם דברים שלדעתנו צריכים לתת להם את המשקל וחלון ההזדמנות הוא חלון שיכול להיסגר על עצמנו. אני זוכר שדיברנו בוועדה אחרת על כך שקפריסין אולי תקדים אותנו אז, מה לעשות, זה קורה. אנחנו מעורבים, תודה לאל, בתגליות של קפריסין שדווחו רק

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לפני כשבועיים, TCF 7. קפריסין שיש תגלית, יש להם כבר אתר עם 1,000 דונם, עם רישוי ראשוני לשלושה טריינס של LNG כולל מדברים היום על בניית המצב הרגולטורי שיאפשר בעצם לתגליות נוספות שעשויות לעבוד בעקבות הסיבוב הנוסף של האקספלורציה, איך בעצם יתנו להם אלוקציה של מקום בתוך האזור הזה שהם זיהו. אז הקפריסאים יודעים מה הם עושים, הם מכשירים את עצמם לייצוא ועשו הרבה מאוד עבודת הכנה שמאפשרת להם להתקרב לייצוא. מה תפקידי הממשלה, במלוא הצניעות, כפי שאנחנו רואים אותם? אנחנו רואים שתפקידי הממשלה צריכים להיות פעם אחת יצירת תמריצים לקיום המעגל הזה שדיברנו עליו של אקספלורציה, פיתוח והפקה; קביעת רגולציה מאפשרת, זאת אומרת, רגולציה שיוצרת את הוודאות, היציבות ואת השקיפות שמאפשרת בעצם את פיתוח התחום; התמקדות במה שהממשלה טובה בו שזה סטטוטוריקה של קרקע, דהיינו לבוא ולאתר קרקעות, לעשות את הרגולציה בדיוק כמו שקפריסין עושה היום על מנת לאפשר, אם וכאשר יש צורך, שהדברים האלה יגיעו בזמן של אותו חלון הזדמנות פתוח. דרך אגב, החלון הזדמנות הוא לא רק אזורי מול קפריסין ומול לבנון, ועכשיו אני אומר לכם גם לבנון הולכת להיכנס בענק לנושא המיצוי של האגן הלבנטיני. דרך אגב, קפריסין, היתרון היחסי שלה, לא רק שהיא

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לפנינו כמה שנים בנושא הקרקע אלא היא גם חלק מה (לא ברור) גם, את זה צריך להבין, שמצבה הגיאוגרפית יש לו יתרונות מול המצב של ישראל ויצירת מסגרת מדינית תומכת כי בסופו של דבר, כשמדובר על פרויקטים של ייצוא, בסופו של דבר זה מגיע לקשר בין מדינות ולכן התמיכה הזו היא תמיכה מאוד חשובה.

שאל צמח: תודה רבה. 20 דקות הפסקה.

- הפסקה -

שאל צמח: Some technicalities. First of all, we have you on record, both on camera and sound. You have something like 30 minutes and then we will have 10 minutes for questions and answers. If you have something that is confidential, please let us know so we'll take it off the record. We have here, around the table, just for your knowledge, I am the director general of the ministry of energy, I have here to my right Mr. Shaul Maridor from the ministry of finance, Mr. Shuki Stern from the natural gas authority, Dr. Gabbi

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Golan from the prime minister office and then we have Avriel Bar Yosef from the national security council and Saar Shafir from the national security council and then, Avi Licht – ministry of justice, Along Shefer – ministry of environment and David Ahron which is our advisor. Please introduce yourselves and the floor is yours.

ג'רמי אליס: Ladies and Gentlemen, thank you very much. My name is Jeremy Alice, I head up the business development team for 'RWE supply and trading' and I have responsibility for trying to bring a lot of the infrastructure and gas supply projects that 'RWE supply and trading' are involved with into a realization phase. I also have responsibility within the RWE group for the Nabucco gas pipeline project which, we find (not clear) probably takes our 90% of my time. I'd also like to introduce my colleague, Ori Brant, who works for me and with me in my

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activities. The second thing I just like to say is that I apologize for not being able to be there in person. I certainly would have liked to have been but just logistics, after the Christmas season coming back meant it was not possible but I thank you for the opportunity for allowing us to do this by video conference. I'm an English man, not a German but I work for a German company or an international company. RWE, I don't know how many of you are familiar with the company but it is one of the largest integrated energy companies in Europe. We have operations all over Europe but clearly based in Germany as the home base. We have international operations around the world, through the LNG business, the coal business and the upstream oil and gas business. RWE has a very large presence in the gas stream, retail business with approximately 60 million costumers in the electricity side and 8 million

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costumers in the gas side in the markets in Europe. We are clearly active in electricity, gas, coal and renewables. We are in fully integrated value train from downstream, such as the retail costumers, from mid-stream in the (not clear) of electricity or transportation of gas or transportation of network systems in Europe and also in the upstream, through the production, either through oil and gas or a power generation, whether it's nuclear, coal, gas or renewables. So, our company has a vested interest in trying to open and bring new gas sources to Europe, clearly for our own corporate benefits but also clearly to assist in the objectives of some of the policy makers within the European network itself. I'm principally here to talk about 'Nabucco'. You've received are very, what I call high overview, concept paper that was sent to the committee. I think just by way of background, how did we get to

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submit that paper, we has a call from one or two companies in Israel. One of them was 'Delek', inquiring about the export of gas (not clear) and how to get to Europe. We engaged in some dialogue with them from an understanding prospective from 'Nabucco' and from that we began to get into some more of the interesting dynamics and developments that are currently going on in the gas sector within your country. That is by way of introduction. I think what I would do firstly is just give you a very high overview of 'Nabucco' and its context with regards to the supply market and Europe, firstly starting with the dynamics on the European side. The European market has a demand base in 2010 of around 520 BCM per annum, that is supplied principally 50/50 from indigenous supplies and the remaining 50% from imported gas, of that imported gas Europe is highly dependant on two gas source countries which is namely Russia and

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Algeria. Approximately 75% of gas that is imported into Europe comes from those two gas sources and hence there is a policy objective, not only of the European Union commission but also with a lot of the energy players such as RWE within the European boundaries to diversify its gas supplies because clearly this is (not clear) in what we call security of supply. If you look at that context from the European side and then you look at the supply sources within the Middle East and the Caspian, as you I'm sure appreciate, the Middle East has significant gas resources as does the Caspian region, namely I talk about the Caspian region Azerbaijan, Turkmenistan, Kazakhstan. The Middle East nor the Caspian region directly supply gas to Europe today, none of those countries do. (not clear) LNG connections, the shipping of LNG but there is no direct pipeline connection to Europe to date. So a gas pipeline to Europe for what we

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say is opening the southern corridor, connecting those gas resources to the enormous demand market in Europe with the objectives to fill demand growth into the future and also the objective of diversifying gas supplies in Europe is a very simple dynamic to understand, if you like the (not clear) rationale behind the 'Nabucco' gas pipeline. That is in context a very high level view to where 'Nabucco' (not clear) from. The pipeline itself has a distance of 3,900 km. It is estimated to run from the Georgian-Azeri border all the way through Turkey up through South Eastern Europe, ending in (not clear). There are also discussions at the moment on whether a (not clear) pipeline to the Iraqi boarder should also be constructed and that is part of the current business model. The current construction costs are about 8 billion Euros and the maximum transportation capacity is 31 BCM per annum. The estimated start of construction

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is 2013 with first gas in 2017. The share holders are currently 6 equal share holders for which RWE is one and then OMV from Austria is another and then the remaining 4 share holders are the state gas transmission companies from Turkey – 'Botash', from Bulgaria – 'Bulga gas', from Hungary – (name) and (name) gas. That's the picture from 'Nabocco'. There's been lots of discussions, lots of press, lots of politics associated with this project. It is, I'd call it infimus, in this context but the whole name of the process at the moment is concentrated on supply sources because what we are doing here as share holders in 'Nabucco' is trying to bring the gas to the market whereas normally the gas would be brought to the market. So we are currently in discussions as RWE and I know (not clear) the other share holders within 'Nabucco' and gas by sources in Azerbaijan, in Turkmenistan and potentially Iraq, but clearly

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there are multihull other sources of gas available and Israel is clearly, at least strategically and location wise, is in a prime position where it could connect into the European markets via 'Nabucco'. The timing and the dynamics are now all associated with where that supply will come from or where those commitments will be made and we are expecting, certainly within the next 2 months decisions from what we would call the base supplies to us from Azerbaijan. We expect decisions coming from there on which routine and which preference the Azeri's will have to bring their gas to market. So, that is a snapshot for 'Nabucco' and I'm moving a little bit more into detail on the benefits and the direction of 'Nabucco'. Clearly 'Nabucco' takes you right into a heart of the European demand market at Baumgarten and also South Eastern Europe where most of the gas supplies are dominated

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control by Russian supplies. Clearly 'Nabucco' gives access, which is our main benefit as RWE, also into the significant German gas demand markets through connections from Baumgarten up to Germany. Clearly 'Nabucco' provides a diversity of costumers, a diversity of opportunities. It can provide direct links into 15 countries within Europe and (not clear) four countries within South Eastern Europe. The 'Nabucco' business model itself is based on transparency, competition and security of transport of rout to the market. There are, as I've said, six share holders and every share holders are regulated by a third party (not clear) and the 'Nabucco' company is regulated by a third party exemptions within the European market and that affectively provides an open access for people or companies being able to book transportation capacity within the 'Nabucco' pipeline. So, for example, if there was

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a company like 'Delek' or other institutions in Israel they could, as with any other companies, in an open season tend the process, book transportation capacity in 'Nabucco' to bring that gas to the European markets. The pipeline is regulated by what we call an intergovernmental agreement which is signed between the countries of Bulgaria, Hungary, Romania, Austria and Turkey and that provides a one-stop-shop under one regulation system, under one business model, for the delivery of gas from the gas sources to the demand markets and hence creates what we would view as a secure transit route versus having to move through different jurisdictions and different regulations. This model is based on transparency, again, open access and also fair capacity (not clear), the (not clear) ultimately will be transparent, they will be set according to cost of the pipeline and the capacity that is booked and will be fully

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visible to participants or shippers wishing to supply gas into Europe. Now, 'Nabucco', I sort of posse here because 'Nabucco' is a concept that has been around for about 10 years. We are at now what I call the end decision game for 'Nabucco' and the southern corridor which is the preferred pipeline routine, so they are going to open that corridor and we are at the moment clearly heavily involved in the dynamics in there. You will appreciate anything to do with pipelines moving across countries is more political than commercial in the first instance, which is unfortunate for me but, on a personal level extremely interesting and that political dynamics and decision making at the moment is highly advanced and we should see some decisions in the next 2-3 months. But the support from the European Union is of highest priority for this project given the benefits for diversification and security of supply within the

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European Union. It has also been extremely important for the Turkish government because it will assist Turkey in realizing its objectives of becoming energy (not clear) and gaining the benefits of having direct pipeline links into Europe. Clearly the US government has been a big supporter of 'Nabucco' as well, given the US's (not clear) objective to link the Azerian (not clear) gas sources specifically to Europe. (not clear) further (not clear) and also (not clear) security in Europe for (not clear) supply. Last but not least, the German government and chancellor Merkel have been extremely supportive of 'Nabucco' and continue to be and if the project is realized we're expecting the German government to actually be an investor in the project at the end of the day. So the political dynamics are complex (not clear) clearly there have been maneuvers by certain countries that will look to try and outmaneuver 'Nabucco' in

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the context because it (not clear) certain monopolistic supply positions into Europe, but that is part of the geopolitics that is currently ongoing. Why 'Nabucco' fought for Israel? Clearly our understanding is that Israel potentially has enormous gas reserves now and is looking potentially at export markets. Clearly a direct link to Europe will create a significant opportunity in terms of not only income but interdependency as the relationships from the routine (not clear) through Turkey, by that through to Europe and they will offer potentially further security of demand, maybe together with (not clear) diversifying the export route, such as LNG. It offers a political stability in the context of the 'Nabucco' (not clear) governmental agreement provides complete non-discrimination and transparency and as an international treaty that will allow for the transfer of gas from supply sources into the European Union once it

hits the 'Nabucco' pipeline. Again, we've talked about open transparent business model and clearly linking Israeli gas into 'Nabucco' would also attract further investments into capital (not clear) in Israel, with maybe other European companies such as RWE and others and that's clearly maybe of interest and an additional benefit for the purposes of having a direct gas link to Europe. On a very high level, how does Israeli gas link into 'Nabucco'? Clearly 'Nabucco' is not linked directly into Israel but clearly onshore pipelines could be built to take gas (not clear) and from there to connect into the (not clear) transportation system in Turkey, linking in to the (name) system through the Iraqi (not clear) of directly into the main line near Ankara or around the Ankara area. The technical feasibilities and the technical ability to link into 'Nabucco' is clearly doable. I understand there has also been a lot of

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feasibility work done offshore (not clear) previously on oil pipelines from the Russians so, a lot of work has been done. How old it is, how viable it is? I clearly haven't seen it so I couldn't say but clearly one of the key criteria for linking that gas into the 'Nabucco' system and utilizing the Botash transit network for companies in Israel wishing to do that is gaining Turkish approval to do so. In short, that is the background to the project. The only additional thing I would like to just mention to you is RWE is also in the LNG business. We are 50% owner of 'Accelerate Energy' which is the floating regasification facilities which Israel is currently in discussions with 'Accelerate Energy' as well so, we have some familiarity, we also understand from our partners in 'Accelerate' that there has also been some discussions on what we call floating LNG, floating liquefaction, and again, clearly LNG what I would say it's an alternative

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or a compliment of pipeline gas. Clearly there are less politics involved in LNG then with pipelines crossing countries but I wanted to just make you aware that we are 50% partner in 'Accelerate' and we also have a vested interest in the LNG business.

שאול צמח: Just to clear one point, do you mean that in order to be a supplier in the 'Nabucco' pipeline there is a precondition of a political agreement between the governments or is it under commercial terms?

ג'רמי אליס: Once you hit the 'Nabucco' pipeline in Turkey, then clearly it's commercial. But for the ability to bring gas onshore into Turkey and then access the Turkish transportation system to link into 'Nabucco', that clearly moves into the government field and the state entities such as 'Botash'. Whether a gas buyer, whether it's RWE or others, will take on the responsibility to do that or whether the Israeli government will

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take on the responsibility to do that – clearly is open. But given that it would need some form of co-operation between the Israeli and Turkish government I think, in my personal view, those kind of things are left to the governments to deal with, but that would clearly be a necessity, from where I sit, if there is an interest for Israeli gas to go to Europe by ‘Nabucco’ there would need to be some co-operation and agreements between Turkey and Israel on how to access in to Turkey and then link up to ‘Nabucco’.

שאול צמח: What would be the legal regime of the operations of the ‘Nabucco’ pipeline?

ג'רמי אליס: The legal regimes are under English law so, once you hit ‘Nabucco’ pipeline it is not under the regulatory systems of Turkey, of Romania or Bulgaria, it is governed by the regulatory system that's in the ‘Nabucco’ intergovernmental agreement. Clearly, local requirements in each

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of the countries need to be complied with but the purpose of the 'Nabucco' intergovernmental agreement is to avoid having each country making changes that will interfere with the flow of gas and different pricing (not clear) systems. So once you hit the 'Nabucco' system you got one (not clear) that's secure for 25 years and management and delivery of that gas is regulated by English law contracts for the transportation of that gas through the pipeline system to the end point of 'Nabucco' or the exit point along route.

דיוויד אהרון: You said at the beginning that there's been a lot of talk about Azeri gas and in particular the potential for use of other systems. Is it correct that it hasn't been decided, the (not clear) has not (not clear)?

ג'רמי אליס: There is a competition in the southern corridor for (not clear) think that (not clear) routine now will open that. Historically, there

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are affectively 4 pipelines competing to open that corridor. There is 'Nabucco', which is what we would see at the champion and ultimately the preferred option of all parties concerned but the issue has been there on trying to get multiple supply sources committed at (not clear) point in time in order to justify the size of the pipeline. The second or third options are what we call 'small dedicated Italian options' which are ITGI, which is looking at utilizing the (not clear) transportation system and then building small pipelines through Greece and then across the Adriatic in Italy and then there's a (not clear) which is a similar concept but further up the (not clear) going by Albania into Italy. They are small dedicated pipelines that focus on the Italian market and they're not really there for diversification objectives for the European Union. The forth one is clearly part of the dynamic (not clear), which is the Russian (not

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clear), and some others project where Turkey just before Christmas has now had an agreement with Russia that they can utilize their territorial waters in the Black Sea to now look at the moving forward on to the next phase of looking at the development of that. So, all those 4 pipelines are buying at the moment for the (not clear) to open this corridor. You'll appreciate that there is multiple geopolitics involved in that, multiple dynamics but we are coming to a point where the end game and the end decision process within Azerbaijan, within Turkey, within Brussels and elsewhere is going to be forthcoming soon. The interesting dynamic that's happened recently is the Azerians and the Turks have now signed an MOU to build their own dedicated pipeline through Turkey that will take only Azeri gas to the borders of Bulgaria and Turkey. That dynamic is new; we are still in discussions with the Azeris and the Turks on

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that dynamic. One of the outcomes of that could be, it's all could because it's all in the melting pot at the moment, could be that 'Nabucco' will end up getting shortened to begin at the Bulgarian-Turkish border and then move up as a trunk pipeline for casing the Middle East gas up to Europe. Clearly, that has pros and cons. Clearly 'Nabucco' is an open transparent system in line with European Union objectives and the pipeline proposed by Azerbaijan and Turkey has a different regulatory framework and different risks. So that dynamic is still ongoing but we will not, as I said I think in our view, within the next 2-3 months where the decision process on this will lie. But this all comes down to where the gas is coming from and the national interest of the gas supply countries that are looking to source Europe.

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דיוויד אהרון: It's the trans (not clear) of the pipeline that you are referring to, isn't it? The agreement.

ג'רמי אליס: (name), yes. That is correct.

דיוויד אהרון: And if you don't win the competition and you don't get Azerian gas, and you're indicating that decision hasn't been taken, your options then become (not clear) primarily Kurdistan and Turkmenistan.

ג'רמי אליס: If Azerbaijan gas is not dedicated to the 'Nabucco' pipeline, 'Nabucco' will not be built. The only thing I would say to counter that, and clearly that decision has not been made yet and it is now forthcoming soon in our view, we don't see any other option that can viably meet Azerbaijan, Turkmenistan and other countries but specifically Azerbaijan strategic requirements. Because there is a gas field in Azerbaijan called (name 2) which has 10 BCM of export gas available but Azerbaijan also has up

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to another 40 BCM of gas that is estimating to becoming online around 2025. It's taken 10 years to get 'Nabucco' and the dynamics of the southern corridor to a decision point which is happening today. Do they want to now do another 10 years and not have a pipeline route that provide the access for their strategic interest and GDP growth of Azerbaijan to the market? Clearly, we will wait and see but this is all part of the chess game and dynamics that are currently going on.

שאל צמח: O.K., I would like to thank you for sharing us your (not clear) and your project. Thank you very much.

- הפסקה -

שאל צמח: צהריים טובים לכם. תודה שבאתם וסליחה על האיחור. אני אעשה הצגה זריזה של האנשים שיושבים מסביב לשולחן. לימיני, שאול מרידור – משרד האוצר,

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אני שאול צמח – משרד האנרגיה. לשמאלי, אלונה שפר – מנכ"ל משרד הגנת הסביבה, עו"ד אבי ליכט – המשנה ליועץ המשפטי לממשלה, משמאלו, סער שפיר – המועצה לביטחון לאומי, אבריאל בר יוסף – המשנה לראש המועצה לביטחון לאומי, ד"ר גבי גולן – משרד ראש הממשלה, עו"ד דרורה ליפשיץ – משרד האנרגיה ומר דיוויד אהרון שהוא יועץ של הוועדה. לפני שתציגו את עצמכם, שני דברים טכניים. ראשית, אני אבקש מכם לעשות את המצגת בסדר גודל של חצי שעה כדי להשאיר לנו זמן לשאול שאלות ככל שיהיו, יכול להיות שאנחנו נתפרץ לתוך המצגת ונשאל תוך כדי. דבר שני, המצגת והדברים שתאמרו מוקלטים כך שאם יש לכם דברים שאתם לא רוצים שיתפרסמו, שיהיו **On record** מסיבות של בעיות של סודיות מסחרית או דברים כאלה, תגידו, נוציא את זה מהרקורד למעט הסייג הזה, השיחה כאן או המצגת כאן היא מבחינת מידע ציבורי.

אבי גפן: שמי אבי גפן, מנכ"ל 'ישראמקו'.

אורי נוי: אורי נוי ונועה גבע, משרד (לא ברור) עורכי דין.

אבי גפן: ראשית, אני רוצה להתחיל בלהודות לכם על הזימון הזה ועל האפשרות להציג בפניכם את עמדתנו. יש לנו מצגת שתציג גם את החברה וגם את הנתונים כפי שאנחנו רואים אותם. פירטנו כמובן בנייר העמדה את עיקרי הדברים. אנחנו לאחר המצגת נשמח לדיון, לשאלות, למענה לכם על

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הדברים שנראים לכם כחשובים ביותר לשמוע מאיתנו. אני אתחיל ואם הדברים הטכניים יסתדרו אז נתחבר גם אליהם. קבוצת 'אקויטל-יואל-נפטא-ישראמקו', קבוצה מאוד ותיקה בתחום חיפושי הנפט והגז. זה הולך למעלה מ-50 שנה לאחור, עדיין חברות ממשלתיות. באיזה שהוא שלב חברות נרכשו על ידי הקבוצה שלנו והגיעו למעמדן היום. בחברות אנחנו כוללים את 'נפטא', החברה שהייתה ממשלתית, נרכשה על ידינו ומתחילת שנות ה-60' בעצם מפיקה גז. המאגר הראשון זה 'זוהר' שהעברנו לפני כמה חודשים חזרה למדינה ואנחנו עסוקים בהפקת גז כבר למעלה מ-50 שנה. 'נפטא' מחזיקה או שולטת במספר חברות שמתעסקות בחיפושי נפט וגז, 'חנר' היא חברה פרטית, 'ישראמקו' היא חברה נסחרת בנאסד"ק עם 1,200 בארות. 'ישראמקו נגב 2', השותפות הנסחרת פה בארץ שהוקמה ב-89' והיא זו שמחזיקה 28%, קצת יותר במאגרי 'תמר' ו'דלית'. 'נפטא חיפושים' שזו שותפות נסחרת, מוגבלת (לא ברור) ים המלח, גם היא שותפות נסחרת בחיפושי נפט. כולן מסוף שנות ה-80', תחילת שנות ה-90'. לגבי תגלית הגז ב'תמר', אני מניח שכולם מכירים את הנתונים אבל בסך הכל התגלית המשמעותית הראשונה אחרי 'ים תטיס' שנמצאת בעצם בבעלותנו החלקית. הפרויקט בעיצומו ולקראת תחילת 2013 יתחיל לזרום הגז. ההשקעות של הקבוצה שלנו בפרויקט הזה מבחינת

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קידוחים, אתם רואים כאן את המספרים, 70-80 מיליון דולר חלקנו וחלקנו בפיתוח הכולל קרוב ל-900 מיליון דולר מתוך 3 מיליארד דולר עלות כוללת. הקבוצה לאורך השנים השקיעה, ופירטנו את זה בנייר, סדר גודל של קרוב ל-700 מיליון דולר בקידוחים, באקספלורציה. רובם, כמובן, יבשים ויש פה איזה שהוא פירוט לגבי ההוצאות האלה, גם הקידוחים וגם הססמיקה שמסביב. 700 מיליון דולר שהושקעו בניסיונות למצוא תגליות עד לתגלית ב'תמר'. פיתוח השדה עצמו, כמו שאתם רואים, 6 בארות עם צנרת כפולה שמביאה לאורך 165 ק"מ את הגז לפלטפורמה שבמרץ-אפריל תגיע לארץ ותמוקם קרוב לפלטפורמה של 'ים תטיס' ושם יטופל הגז ויגיע לחוף. המערכת הזאת מתוכננת לספק את הדרישה המקומית ועלותה כאמור 3 מיליארד דולר. שוק הגז, כמו שאנחנו רואים אותו גם על פי הנתונים והעבודות שנעשו עד היום, שוק הגז המקומי בצמיחה, עולה עד לכיוון של 16-17 BCM לשנה ב-2030. כרגע ההיצע המקומי היחידי הוא 'תמר' עם 245-246 BCM ויחד עם 'לויתן' יגיע בתוך 5-6 שנים ל-700 BCM. אם תעשו את המכפלות, ההיצע גבוה משמעותית מהשוק המקומי לאורך השנים האלה ואני מאד מקווה שההיצע עוד יגדל נוכח תגליות נוספות שיעשו כי השנה, ב-2012, עומדים להתבצע קידוחים רבים והרבה כסף הולך להיות מושקע בניסיונות לאתר מאגרים נוספים

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של גז ובתקווה גם של נפט. מכיוון שאני נמצא גם במשאים ומתנים עם השוק המקומי לגבי מכירת גז אני גם יכול להעריך את הכמויות שהשוק המקומי רוצה להתחייב להן ולהתחייב התחייבויות ל- 15,17 ו-20 שנה. אתמול דיווחנו על חתימת ההסכם הראשונה עם 'דליה'. זה עדיין מותנה במימון ובהקמה של הפרויקט אבל אנחנו מעריכים שהביקוש הקשיח על פי התחייבויות של השוק המקומי יהיה בסדר גודל של 5 BCM לשנה. למרות זאת, הצנרת יודעת להביא 9-10 BCM לשנה ואנחנו מניחים שהפרויקט המוקם שבו אנחנו משקיעים כרגע ושיושלם ב-2013 ידע לספק את הצריכה המקומית. מכיוון שכך וב'תמר' אנחנו רואים עודפים של גז, חתמנו על הסכם או על ROI שאני מקווה שיתפתח להסכם מפורט, הסכם להקמת פלטפורמה צפה להנזלת גז ולייצואו מחוץ לישראל. תחילת שיווק הגז מתוכננת ל-2016. מחיר נטו בפי הבאר כפי שדיווחנו הוא בין 7\$-9\$ ל-1 MBTU עם כמות שתנוע סביב 4 BCM פלוס מינוס מספר אחוזים. זה הסכם ארוך עם הכנסות ככתוב שצפויות להיות מעל מיליארד דולר בשנה.

שאל מרידור: אתם יודעים להגיד את המחיר אצל הלקוח? (לא

ברור)?

אבי גפן:

[REDACTED]
[REDACTED]
[REDACTED]

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[REDACTED]

שאל צמח: אתה צריך מתקן גיזוז בשביל לקלוט את הגז.

אבי גפן: נכון.

שאל צמח: אם אין את המתקן אז אין יתרון למדינה.

אבי גפן: נכון. כרגע גם אין מתקן גיזוז אבל אני אומר, עדיף מאשר

אם אין. זאת אומרת, זה פיתרון שניתן להשתמש בו בעתיד וכמובן הקשר ההדוק עם דרום קוריאנה, שוב, מדינה משמעותית, חשובה שאנחנו יצרנו את הקשר איתה וגם 'דייהו' וגם 'קו-גז' בבעלות ממשלתית. 'דייהו' רואה

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בזה מנוע צמיחה. הפלטפורמה הזאת היא פלטפורמה ראשונה שהם בונים, הם משקיעים בזה המון כסף בתכנון והם מתכוונים להיות שחקן עולמי בשוק הזה. הגז שלנו, הגז ב'תמר', מאוד נקי, מאוד מתאים לפלטפורמה כזו. הים כאן מאוד מתאים, הראשוניות של הפרויקט הזה מבחינת זה שעוד אין התקשרויות (לא נשמע) למכירת גז ויש כמות גז עודפת, מתאימה להן ולכן מהרבה מאוד סיבות הן מאוד רצו להיכנס לתחום הזה כאן, איתנו ולהשקיע את הכסף הנדרש, וזה המון כסף, כדי שנוכל אנחנו והם ליהנות מהאפשרות הזו. צריך לזכור שהסכמי הייצוא האלה הם הסכמים ארוכי טווח ולכן, ניצול ההזדמנות בחלון הזמן הזה של החתימה איתם ואולי עם אחרים נכון ומתאים להיום. בעוד שנתיים, שלוש, חמש או שמונה שנים אנחנו בוודאי לא יודעים מה יהיה מצב השוק. גם הקונים וגם המוכרים מחפשים את אותם הסכמים ארוכי טווח משום שזה כרוך בעלויות כבדות מאוד, בהקמת תשתיות, בהשקעות עתק ולכן, ההסכמים האלה מוטב שייחתמו מוקדם מאשר מאוחר ומוטב שייחתמו לשנים ארוכות ככל האפשר וזו דוגמא לאותה דרך. ההסכמים נחתמים ומשני הצדדים רוצים שזה יהיה הסכם ארוך טווח. זה פחות או יותר הנתונים שרצינו להציג לכם כרקע לנייר שהצגנו בדבר הנושא של ניהול

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תשתיות הגז או הייצוא בישראל. אם יש לכם איזה שהן שאלות ממוקדות, נשמח להתמודד איתן.

אורי נוי: ואם לא אז אני הייתי מבקש לתת, אני לא אחזור על מה שכתבנו ואני מניח שכולם קראו, יקראו אבל כן לתת איזו שהיא מסגרת כללית של הזמן תהילה הקצר שמוקצב לנו גם בכתב וגם פה בעל פה שבחרנו בעצם להקדיש אותו לנושא אחד. ברור לנו שזה לא הנושא היחיד שנדון פה ועומד בפני הוועדה אבל אנחנו חושבים שבנושא הזה 'ישראלמקו' מייצגת איזו שהיא נקודת מבט ייחודית או שונה קצת מהמשתתפים האחרים או מהגופים האחרים שאתם שומעים פה ולכן חשוב לנו שעמדתה תישמע והנושא הזה הוא הנושא של הייצוא. למה 'ישראלמקו' מייצגת פה עמדה שונה או למה היא הרבה יותר פגיעה פה מאחרים? כיוון ש'ישראלמקו' היא בעלת מניות גדולה ב'תמר' מצד אחד ומצד שני, היא לא בעלת מניות ב'לוויתן' מה שיוצר פה חשיפה לתרחיש שאנחנו חוששים ממנו ויכול להיות ששותפינו או מתחרינו, הגופים האחרים, פחות חוששים ממנו וזה שבעצם 'תמר' תוקרב בדרך כזו או אחרת להבטחת הביקוש המקומי. נקרא לזה ככה, תישא על כתפיה את מלוא הנטל של הבטחת הביקוש המקומי בעוד שהמאגרים הבאים יוכלו גם לייצא וזה תרחיש שמבחינת 'תמר', ולכן גם מבחינת 'ישראלמקו', הוא תרחיש מאוד בעייתי גם אם יכולים להיות גופים שיגידו 'או.קי.',

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במאזן האינטרסים הכולל שלנו אם 'תמר' תשמש להבטחת הביקוש המקומי ומנגד נקבל חופש ייצוא בתגליות אחרות – אנחנו יכולים לחיות עם זה'. אז אנחנו לא יכולים לחיות עם זה ולכן אנחנו חרדים במיוחד לסוגיה הזאת. זה בצד אחד, בצד שני, בצד של המדינה, אנחנו חרדים שמה שיבטיח בסופו של דבר את עמדת המדינה בעניין הזה זה באמת רק הנושא של הבטחת הביטחון האנרגטי שהוא ללא ספק אינטרס חשוב וחשוב מאוד של המדינה שצריך טיפול אבל לא ייכנס פה עירוב כובעים בהיותה של המדינה בעצם גם הבעלים של צרכן הגז הגדול ביותר וגם הרגולטור של השוק ומתוקף זה מעוניינת מטבע הדברים בהפחתת מחיר הגז ככל האפשר. אז אנחנו אומרים את זה כבר בפתח הדברים, אנחנו מבקשים מהוועדה לנסות לעשות את ההפרדה הזאת בין הכובעים טוב ככל האפשר ולשים בצד לחלוטין את הכובע השני ובאמת להתרכז רק בנושא הביטחון האנרגטי ולשים בצד את נושא המחיר. כי אין ספק שאם באים ואומרים 'לא מייצאים' אז יש בזה איזה שהיא תרומה להפחתת המחיר ואנחנו חושבים שזה שיקול לא לגיטימי במובן הזה כי המחיר שאנחנו מייצאים בו הוא מחיר שוק בסופו של דבר וגם אם יצטרכו לשלם פה את המחיר הזה, מה שאני לא חושב שצפוי לקרות, זה יהיה בסך הכל התייחסות למחיר שוק ואני מניח שרוב הקולות פה לפחות או כולם כנראה תומכים במובן הזה

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בסוג של כלכלת שוק. אז אלה האינטרסים של כולם מסביב. לגופו של עניין, הקריאה שלנו או הבקשה שלנו בתגובה בכתב המרכזית, אם צריך לתת לה כותרת, זה באמת קריאה לעשות איזון ולנקוט באיזה שהיא גישה של מידתיות ואיזון. שוב, בהיותנו אנחנו חושבים מסוגלים גם לנסות לעשות את היפוך התפקידים ולשים על עצמנו את כובעו של הרגולטור, אנחנו לא חושבים שזה הגיוני לבוא ולהגיד 'עזבו הכל, יאללה, שוק חופשי, פה המשחק פתוח. יהיה גז לשוק המקומי – על הכיפק, לא יהיה לשוק המקומי – מה לעשות. לא נעים אבל זה מה שיש, זה מה שהשוק החופשי מכתוב'. אנחנו לא חושבים שזו גישה ריאלית, אנחנו לא חושבים שזו גישה נכונה מבחינת ישראל ולכן אנחנו לא הולכים לטעון לגישה שאנחנו לא מאמינים בה. מה שכן, אנחנו חושבים שלצד האינטרס המאוד לגיטימי וחשוב של הבטחת הביטחון האנרגטי של מדינת ישראל צריכה הוועדה לשקול גם את קיומם של האינטרסים האחרים וספציפית בעניין שלנו זה הקיום של האינטרס, אפשר לתקוף אותו מכל מיני כיוונים ואני לא אכנס פה להרחבות משפטיות, זה לא משנה אם נקרא לו חופש העיסוק או נקרא לו חופש הקניין או נקרא לו אינטרס ההסתמכות על כך שקראנו כולנו את חוק הנפט וקראנו את האיזון שנעשה על פיו. אבל בשורה התחתונה יש פה הזדמנות כלכלית בעלת ערך מאוד גדול, היא

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נמצאת שם עכשיו, היא שוכבת על המדף, יש שם את ה-
LOI הזה שנחתם והמשמעות של להגיד כרגע ל'תמר':
 'אסור לכם. תזרקו את זה לפח', היא משמעות מאוד כבדה
 ואני חושב שכשהמדינה מקבלת החלטות גם את זה היא
 צריכה לשקול. עכשיו, מכל הדיבורים והמסגרת השאלה
 היא באמת מה עושים עם כל האיזון הזה ועם כל
 המידתיות הזאת ופה אנחנו ניסינו לתת בתגובה שלנו
 איזה שהיא תשתית מספרית לקבלת ההחלטה כמו שאנחנו
 רואים אותה. ניסינו להראות או לנתח את המספרים,
 קודם כל, אני חייב להודות, לעצמנו. אנחנו לא עשינו את
 זה עד הסוף קודם לעצמנו ואחרי זה גם הצגנו את זה פה
 בתור קריאה להשתמש בזה לערוך את האיזון. כי בעינינו
 בסופו של דבר, ההחלטה לא צריכה להיות להתיר את
 הייצוא, כמו שאמרתי, אבל היא גם לא צריכה להיות
 לאסור את הייצוא. ההחלטה, כשאנחנו אומרים מידתיות
 ואיזון צריכה להגיד 'הייצוא יותר בתנאים מסוימים'
 והתנאים האלה הם תנאים של הבטחת האספקה לשוק
 המקומי ולכן ניתחנו ראשית את צרכי השוק המקומי
 ובעניין הזה לא המצאנו תחזיות ולא התיימרנו, לקחנו
 את התחזית של משרד התשתיות ואימצנו אותה כלשונה
 וגם אם יגידו שלוקחים את התחזית הזאת ולוקחים עליך
 ספייר של 10% זה גם נשמע לגמרי לגיטימי. זה בצד של
 הביקוש וצד ההיצע הוא יחסית פשוט גם כן כי יש פה שני

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מאגרים עם BCM 700 בסך הכל שמהם 'תמר' זה 246 BCM ויכולות ההפקה, גם הן בסופו של דבר הסיפור שם פשוט כי תשתית ההנזלה לא באה על חשבון תשתית הולכת הגז לשוק המקומי. זאת אומרת, אם תשתית הולכת הגז לשוק המקומי מאפשרת 9 BCM לשנה, גם אם נייצא וננזיל ונייצא וגם אם לא זה יישאר 9 BCM לשנה וכשזה יעלה ל-15 זה יהיה 15. כלומר, המלחמה היא לא על התשתיות, המלחמה היא רק באמת בגרעין של מקור הגז. אנחנו באנו וניתחנו את זה כמו שאמרתי, מכמה כיוונים. קודם כל בדקנו, או.קי, בוא נראה תחזית השוק המקומי, עד איפה יספיקו 'תמר' ו'לוויתן' אם יגידו להם 'אסור לכם לייצא בכלל, הכל מוקדש לשוק המקומי' והתשובה יצאה שזה משהו כמו 2060 או מעבר לזה, התחזית נגמרת מתישהו אבל הנחנו לצורך השמרנות שהיא ממשיכה באיזה שהוא גרף דומה והגענו ל-2060 כשאם נחזור למידתיות ולאיוון, בעינינו זה לא מידתי ולא מאוזן לנסות להבטיח אספקה עד ל-2060 ואני אגיד עוד פעם את מה שהוא בעיני כמעט מובן מאליו אבל בכל זאת אני אגיד אותו, כמובן שיש משמעות כלכלית אדירה, מעבר למשמעות של איבוד ההזדמנות של הייצוא שדיברנו עליה, כשאתה אומר לבעל המאגר 'אתה לא יכול לנצל את המאגר שלך עד לשנת 2060 או 2050' כמובן שיש לזה משמעות

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כלכלית אדירה וכולם יושבים פה עם רקע מספיק טוב בשביל להבין מה זה הכנסה שמקדימים אותה ב-30 שנה ומה המשמעות הכלכלית. וכל זה אני אומר כשאני כרגע מניח לצורך השמרנות שיש את 'תמר' ו'לוויתן' בלבד ואני חושב שאין היום אף תחזית של גוף מחקרי או של גוף ייעוץ רציני שמסתובב באזור שחושב שבשנים הקרובות משפע הקידוחים שנעשים פה לא עתיד להתגלות אף מאגר נוסף. אבל בכל זאת אמרנו 'או.קי.', רגולטור לא יכול להניח את מה שיקרה ויכול להיות לצורך העניין שאני לא יודע מה יקרה בשוק ויפסיקו את כל הקידוחים כי שוק הגז יתמוטט וזה לא יהיה לאף אחד וכל החברות יפשטו את הרגלי, אז לקחנו רק את 'תמר' ו'לוויתן'. אז כמו שאמרתי, 2060 בעינינו זה לא הגיוני ולכן עברנו לשאלה מה כן הגיוני ופה אני חושב שזו שאלה שבסופו של דבר תשב על השולחן שלכם להחלטה. אנחנו חשבנו שהתשובה לה צריכה להיות ושוב, אין פה כמובן מדע מדויק, אנחנו חשבנו ש-20 שנה היא תשובה ראויה ונאותה. לצורך העניין, בין המודלים שיוצגו לא על ידינו בפני הוועדה אמרנו 'מודל אוסטרליה', 20 שנה הבטחה, נשמע לנו הגיוני ואם לוקחים ל-20 שנה כמובן ש'תמר' ו'לוויתן' מבטיחות מעל ומעבר את אספקת השוק המקומי גם בהנחות ייצוא משמעותיות מאוד ולצורך העניין הנחנו, שוב, הכל הוא סוג של ניסוי וטעייה כי אתה יכול לתקוף

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את העניין הזה לא רק בניסוי וטעייה, אמרנו 'בוא נניח שהאספקה מתחלקת חצי-חצי בין יצוא לבין אספקה לשוק המקומי. בוא נראה מה יוצא אז'. יוצא לנו אז שאנחנו מגיעים עד ל-2035 מבחינת אספקת השוק המקומי. 2035 אנחנו מדברים על 23 שנים, רק 'תמר' ו'לוויתן', שוב אני חוזר למרות שאמרתי את זה כבר, הנחה של אין אף תגלית נוספת נשמעת לנו הנחות מאוד שמרניות וראויות וזה כשלוקחים בחשבון שחצי מהאספקה היא לייצוא. כדי לבדוק את העניין הזה גם מעוד כיוון ניסינו להיכנס לאיזה שהוא ראש של רגולטור ואמרנו 'בוא נראה מה קורה אם עכשיו מתעכב 'לוויתן', כמה אפשר לסבול את העיכוב של 'לוויתן'?!'. הגענו למסקנה ש'תמר' לבדה, גם בהנחה של חצי-חצי בין הייצוא לאספקה לשוק המקומי, יכולה לספק את צרכי השוק המקומי בעיכוב של 'לוויתן' עד 2025. לכל הדעות שוב, מעל ומעבר לכל תרחיש סביר. אני מזכיר, אנחנו מדברים היום 2016 על 'לוויתן', משהו באזור הזה. עד 2025 וגם אם ב-2025 ייכנס 'לוויתן' או לצורך העניין ייכנס המאגר הבא, 'תמר' יודעת לספק את השוק המקומי בחצי מיכולת התפוקה שלה. אנחנו נשים את מה שאנחנו מנסים להציע גם בתוך הפרופורציה שלו, אנחנו לא מתיימרים להציע איזה מודל מגובש, סגור ועשוי, זה לא זה. אנחנו גם לא חושבים שזה היה מתקבל לו היינו עושים את זה. מה שאנחנו מנסים להציע זה את

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הכיוון ואת העקרונות של המודל שאנחנו חושבים שצריכים לחול והמודל הזה, כמו שאמרתי, הוא מודל של התרת הייצוא בפלח מסוים מכלל התפוקה וזה מודל שמאפשר גם להבטיח את הביטחון האנרגטי של מדינת ישראל באמצעות אספקה לשוק המקומי וגם לאפשר ל'תמר' למצות את זכויותיה תחת אותו ביטחון אנרגטי ולמצות את אותה הזדמנות שקיימת היום בשוק ולייצא. אנחנו חושבים שהשוק הזה בסופו של דבר ייצא נשכר, כל הצדדים יצאו נשכרים מאיזון כזה. אני לא אוהב להשתמש בנימוק של המיסוי כי אני חושב שמדינה ששוקלת כמו כל אדם ויכולה להחליט 'לא מעניין אותי המיסוי ומעניין אותי רק להבטיח את הביטחון האנרגטי' ואני חושב שבכל השווקים שאנחנו רואים קיומו של שוק קצת יותר משוכלל, שיודע גם לייצא, שיש לו גם תשתית הנזלה, שהוא יותר מגוון, אני חושב שבסופו של דבר לטווח ארוך ובהתחשב במקום המאוד תחילתי שאנחנו נמצאים בו בסיפור הזה של שוק הגז, אני חושב שבסופו של דבר השוק יצא נשכר ואם אני חוזר להיבט האגואיסטי הצר של 'תמר', אני חושב שכל תוצאה אחרת מבחינת 'תמר' היא תוצאה שהיא לא ראויה כי היא תוצאה שבעצם לוקחת ושמה את 'תמר' בתור הש.ג., תעצור ואחרי זה יהיה בסדר, כולם ייצאו, כולם ישמחו והכל יהיה על הכיפק. מה לעשות, אתה רק תספק לשוק המקומי.

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שאל צמח: תן לי רגע להבין, רק כדי לחדד. הבעיה של 'ישראל מקו' עם הייצוא מול האספקה לשוק המקומי זו ההנחה שהמחיר של הייצוא יהיה יותר גבוה או שזה רק שמירה על הגמישות?

אורי נוי: אני אתחיל לדרג את הדברים. קודם כל, זה הרצון לנצל את המאגר ושלא יהיה מאגר שב-2060 לפי הגרף הקיים ייגמר. זו הנחה לא הגיונית. הרצון שלך הוא להקדים הכנסות לאיזה טווח סביר. זה רצון של כל מאגר ושל כל פרויקט תשתית בעצם. זאת אומרת, דחייה כמו שאמרתי קודם ב-50 שנה של הכנסות זה פחות או יותר לבטל הכנסות באיזה הנחות כלכליות. זה דבר ראשון. דבר שני ואני אוהב בסופו של דבר לשים את הדברים על השולחן, שמאוד מטריד אותנו זה מבחינת העיתוי. כי מה אני חושש שהוועדה הזו בסופו של דבר עלולה לעשות? להגיד 'או.קי.', בואו נדבר עוד שנה וחצי שנתיים. נראה מה יהיה, הכל יהיה יותר מסודר'. זה, מבחינת 'תמר' ומבחינת 'ישראל מקו' שזה האינטרס שלה, זו תוצאה רעה מאוד. זו תוצאה רעה מאוד מכיוון שהיום יש על השולחן הזדמנות שלא בטוח שתהיה שם עוד 3 שנים וזה ההזדמנות של הייצוא למזרח ובטח שמעתם גדולים ממני מדברים על זה וכותבים על זה אבל, יש היום הזדמנות אמיתית, היא באה לידי ביטוי ב-ROI שנמצא, המזרח זקוק לגז, אין שם כרגע מקורות אספקה עצמאיים, הוא

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מוכן לשלם הרבה יותר כסף ממה שמקבלים פה ושוב, זה בסדר, הפער הזה אנחנו מניחים שיישמר. החוזים נחתמים והמחירים שהחוזים נחתמים ידועים לכולם והמשחק פתוח אבל בצד זה אנחנו גם אומרים, יש פה \$8 בממוצע תמורה נטו. אז כל אחד יעשה את ההשוואות פה. אז אני אומר, יש פה שילוב בין עצם הרצון לנצל את המאגר לבין הטיימינג שהוא פה חשוב מאוד.

אבי גפן:

אין כוונה שזה יהיה על חשבון השוק המקומי. במקביל לשוק המקומי, בטווח השנים הקרובות. כשיש מאגר נוסף, מפיק, שישתתף בשוק המקומי כתף לכתף עם 'תמר' ויאפשר גם ל'תמר' וגם ל'לוויתן' או מאגר שלישי שיימצא שכל אחד ייצא את חלקו היחסי ואז השוק המקומי לא נפגע, הוא מקבל את כמות הגז הנדרשת, התשתית של 'תמר' מספקת את זה ויודעת לספק את זה אבל יש עודף. השאלה, לטובת הביטחון האנרגטי של המדינה ולטובת הדורות הבאים, מי נושא בנטל הזה? אם 'תמר' הראשונה היא זו שהניחה את התשתית, היא זו שמספקת לשוק המקומי, אני חושב שלא ראוי להגיד 'טוב, אתם כבר פה, אתם השקעתם, אתם התחברתם – תישארו. אחרים ייהנו מהמחירים הגבוהים, ייהנו מהייצוא, ייהנו מניסיונות לטורקיה, לקפריסין, ל-LNG וכולי. כולם יחגגו ואתם, מה לעשות, אתם נשכבים על הגדר עבור כולם'. זה לא ראוי.

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שאל:

הצד השני של זה, וצריך לזכור גם אותו, זה לא אומר שלא. ואנחנו כולנו מכירים את המשאים והמתנים שמתקיימים באוויר. בסוף, היתרון הגדול של 'תמר' אל מול כל האחרים שעוד לא קמו מזה שהיא ראשונה שהיא בעצם מבטיחה את המימון וההקמה של הפרויקט דרך לקיחה של הרבה מהפוטנציאל של השוק המקומי בשנים הקרובות בהסכם שהיא חותמת. אני לא אומר שזה אומר שהיא לא יכולה לייצא, זו שאלה אחרת. אני אומר שבמובן הזה היא לא ככל המאגרים, במובן זה שיש לה ביקוש בשוק המקומי ואם היא תחתום על הסכמים שמדברים בהם ואנחנו לא נכנסים אליהם, לו היא תחתום בהם, המאגר הבא כשירצה להיכנס לשוק המקומי יהיה לו הרבה יותר קשה. במובן הזה היתרון הוא דווקא של 'תמר' ולא הפוך, אבל אני מבין את האמירה.

אבי גפן:

לכן גם ציינתי במצגת, הדרישה המקומית הקשיחה שעליה מוכנים הלקוחות המקומיים להתחייב לא עוברת את ה-5 BCM. כולם שומרים את עצמם את האפשרות 'יהיה עוד מאגר, נקנה משם'. זאת אומרת, לומר ל'תמר': 'אתם תשרתו את השוק המקומי אבל השוק המקומי לא מתחייב לקנות מכם',

שאל:

שלא ישתמע מהדברים שזה מה שאמרתי, אני רק אומר שצריך לזכור שיש צד שני. הראשונות היא טובה ורעה.

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אורי נוי: צריכים להסתכל על התסריט ולפחות את השנים הקרובות אני חושב שאפשר לגלגל קדימה את הסרט הזה, לעשות לו **fast forward** ולראות אותו במידה רבה של בהירות. 'תמר' הולכת וחותמת על חוזים. הייצוא הזה, גם אם מדובר על הייצוא, הוא לא מחר בבוקר. הייצוא מתחיל ב-2016, 'תמר' הולכת להתחיל להפיק ב-2012. 'תמר' חותמת על כל חוזה וכל דרישה קשיחה של השוק המקומי תסופק בברכה, לא סתם, על ידי 'תמר'. עדיין, זה משאיר לה עתודות. תסתכלו על התחזיות שלכם עצמכם, זה משאיר עתודות. עם **BCM 7.5** או **6.7** או **7.5** ועם **BCM 8** 'תמר' לא מתקרבת למצות את הפוטנציאל שלה.

שחר סולר: (לא נשמע) **LNG**, יש לכם איזה מיקום שאתם יודעים שאתם רוצים לשים אותו?

אבי גפן: קודם כל, הפלטפורמה היא פלטפורמה צפה אז היא יכולה לנוע ממקום למקום. התכנון הראשוני שלנו הוא להשתמש דווקא במאגר 'דלית' שזה מאגר קטן בתוך שטח החזקה ולהפיק ממנו ולשרת את הפלטפורמה הצפה הזו במשך כמה שנים ואז להעביר אותה לבאר, זו תמיד באר חדשה שנקדחת, זה לא מבין ששת הבארות שתיארתי קודם שמשרתות את הצנרת לחוף. באר 'יהודית' ב'דלית' ולאחר מכן באר 'יהודית' ב'תמר' לשרת את הפלטפורמה הצפה. אז המיקום יהיה ליד הבאר ב'דלית' ואחר כך ליד הבארות ב'תמר' אבל אין מקום מדויק.

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שחר סולר: לא בקרבת החוף אלא מעל הקידוחים.

אבי גפן: לא, חבל לבזבז צנרת, אתה יכול להניח את זה מעל הבאר וזה הרעיון, ההשקעה שלנו זה הקידוח עצמו, לא שום דבר מעבר לזה.

גבי גולן: 1,800 מ' מחדרה. הפרויקט הזה מלהיב את הדמיון,

אבי גפן: איזה מהם?

גבי גולן: ה-FLNG. אנחנו כמובן שמענו וקראנו ולמדנו. במידה ומסיבה כלשהי הפרויקט הזה לא קורס עור וגידים, זאת אומרת, **Letter of intent** זה יפה מאוד אבל זה לא דבר שאפשר ללכת איתו אחרי זה אם דברים משתבשים. יש לכם איזה שהוא **fall back position**? זאת אומרת, דרך אחרת לייצא? מה דעתכם על, נניח, מתקן LNG בחופי ישראל?

אבי גפן: אנחנו ערים למספר רעיונות כמו LNG בקפריסין. על החוף פה בישראל אני לא בטוח שיש מקום וזה בר היתכנות אבל בעקבה דרך קצא"א, טורקיה. אני מכיר את כל הרעיונות. אם אנחנו לא עושים את זה עם פלטפורמה צפה כי מאיזה שהיא סיבה זה משתבש, אנחנו באותה סירה והולכים ביחד עם שאר המאגרים כי לא הגיוני שכל אחד יפתח לו את ה-LNG שלו, את הצנרת לטורקיה שלו. יתחברו הגופים ביחד וייצאו. אני מניח שאז לפחות

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הממונה על ההגבלים והממונה על המחירים לא יפריעו כי זה לא יהיה פנימי, זה יהיה החוצה.

שחר סולר: השאלה אם יש לכם איזו שהיא העדפה? האם אתם באים ואומרים 'תראה, אנחנו היינו מעדיפים מתקן LNG עם open access לחופי ישראל. אנחנו נהיה מוכנים להיות חלק מקבוצה שתפעיל מפעל בישראל, אולי אתם מעדיפים יציאה לים האדום או אולי לגשת לקפריסין.

אבי גפן: לא, תראה, יש גם שאלה של מיקום ושל מרחק. המיקום של 'תמר' מספיק קרוב כדי לחשוב על ישראל כאלטרנטיבה הראשונה. זה עדיף לנו מ-open access, הכל בר פתרון ומחשבה. אין לנו התנגדות עקרונית לשום דבר מתוך הדברים האלה. מבחינת השקעה, לוחות זמנים והיתכנות דווקא הפלטפורמה הצפה הזו שבחנו אותה הרבה חודשים, כמעט שנה ולמדנו את מה שקורה בעולם, היינו בנורווגיה ולמדנו מהם, למדנו מהקוריאנים, למדנו את מה ש'שלי' עושה באוסטרליה ואנחנו מכירים את הסיכונים ואת הסיכויים ואני חייב להגיד לך שעשרות מיליוני דולרים מושקעים על ידי הקוריאנים כדי לוודא כי הם הולכים להשקיע 2-2.5 מיליארד דולר וזה עליהם ורק אחרי שהם יגמרו את ההשקעה והכל יעבוד הם יקבלו את פרודת הגז הראשונה ולכן, אנחנו בדקנו, הם בודקים ומשקיעים הרבה כסף. זה בר היתכנות וזה בכיוון. לא יהיה זה – אנחנו נשנס מותניים יחד עם שאר השחקנים

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בשוק. כי השוק המקומי קטן על כמות הגז הנמצאת וחייבים למצוא פתרון ויש מספר פתרונות אבל אני לא חושב ששום דבר הוא מעשי כרגע. אז אם המדינה תתרום שטח או תאפשר רגולציה מהירה של אישורים כדי להקים מתקן כאן? מה טוב. אנחנו נשמח להתחבר גם לזה ויש עודפים ויש מספיק גז כדי לעשות גם את זה אבל זה תהליך ארוך ושום דבר עוד לא מעשי.

אורי נוי: אני חושב פה ביחס לתשובה לתת שתי תשובות מאוד כלליות. אחת, אנחנו קודם כל מעדיפים חופש בהיבט של הייצוא. כלומר, אנחנו חושבים שהפתרון הנכון בייצוא זה לתת לחיים לקבוע מה יקרה ולא לקבוע איך ומאיפה בדיוק ייצאו, אני לא חושב שזה אפשרי בסופו של דבר. שתיים, לגבי אותו LOI, זה לא שרצנו להחתים LOI ופשוט עמדו הקוריאנים בדרך והיו הראשונים שחתמו. ה- LOI הזה, כמו שאבי אמר, זה פרי של הרבה מחשבה ובדיקות וכן הלאה ואחרי ש'ישראל מקו' הגיעה למסקנה שזהו המסלול בעל ההיתכנות הגבוהה ביותר. חד משמעית, כרגע 'ישראל מקו' בדעה ואם לא ישתנה משהו דרמטי אז זאת תהיה הדעה כרגע, שזהו המסלול הנכון ביותר, המהיר ביותר וכמו שאמרתי, יש פה חשיבות מאוד גדולה גם לתזמון והקצר ביותר להגיע לידע הזה שהוא יעד מאוד חשוב מבחינתנו.

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דיוויד אהרון: I think your argument is that you feel a bit discriminated against because, if 'Tamar' is dedicated to the domestic market then you lose your opportunity. But you also mentioned the exploration world, I think it was (name). What do you see in the future? You are planning to build it?

אבי גפן: We are not part of the (not clear). We have others, we have 'Shimshon' for example.

דיוויד אהרון: Then how do you see future explorations with these committed to?

אבי גפן: Yes. We are committed and we are going to drill it in the next few months and hopefully, if there is a discovery there, we have to think how do we export the gas from there, if it's gas. It's specifically very close to the ENG landing pipeline so, it might be used by us there or some other ways and even FLNG, if it works in 'Tamar', why not use it in other places too?

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דיוויד אהרון: Are you committed under your license? You have to build?

אבי גפן: Yes. We are in the process right now.

דיוויד אהרון: What would happen if you didn't build?
There's no,

אבי גפן: There is no chance that we won't drill it. We are obliged to drill it in the next few months.

דיוויד אהרון: But internationally, people usually have bank guaranties (not clear).

אבי גפן: Not in Israel. It's our own money, ours and investor's money to invest and we have the money, we have the operator. It's (not clear).

דיוויד אהרון: Internationally generally companies are required to (not clear) bank guaranties against commitments.

אבי גפן: I think we are not allowed to get bank (not clear), according to the Israeli law or environmental rule or whatever.

דיוויד אהרון: No, what I'm referring to is a guarantee from the company to the state that says 'if I

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don't drill this now then the bank will pay that money'. It's a commitment in the (not clear).

דובר: It's not the Israeli policy.

שאל צמח: ? תודה FLNG עוד שאלות או הערות? אבריאל, על ה-
רבה.

אבי גפן: תודה רבה.

- הפסקה -

שאל צמח: Hello Nick. Shaul Zemach sitting in front of you. I'm the director general of the ministry of energy and I would like to apologize about the delay. Since we have a delay we will have to squeeze you into a frame of 15 minutes. Just one technical issue, we have you on record so just introduce yourself for the sake of the record and for the other people or other members of the committee and then we will start with your presentation.

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ניק באטלר: I'm Nick Butler. I'm a professor of public policy at Kings College London and I was formally senior vice president for policy and strategy development at BP.

שאול צמח: O.K., you can go ahead now.

ניק באטלר: Thank you for the opportunity to talk to you. I'll be very brief. First of all, I think that the decisions that you are coming to should be understood as being very early in the (not clear) of development of the offshore province of which your discoveries are just one part. First of all, it's not yet clear what the total volume of the discoveries in Israel amounts to, there's still a lot of drilling to be done and secondly, we have not yet seen a detailed (not clear) either in Cyprus or offshore Lebanon or in any other part of the Levant basin. The international companies believe there is more to be found and I think that the decisions on export routes will come when we know a great deal more about what the

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resource (not clear) is, because if the industry goes to a route involving LNG it is likely that there will only be one central gathering point for that LNG facility given the costs involved. So that's my first point. The second point is that it is clear from all the numbers I've seen that Israel already has a surface of gas over the amount that it's likely to use internally on current policies. The responds to that have so far focused on exports. I think, and I understand the discussions of the committee so far of (not clear) this, that both the export alternative routes, via Cyprus and via Aqaba in Jordan are complex, slow to develop and they could be politically problematic and that's why, to come to my main point, I think that it would be well worth the committee and the Israeli government looking at the potential to use a great deal more of the gas that's being discovered within Israel, particularly to produce electricity to transfer

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away from using coal and oil, to focus on introducing electricity to a new part of the economy that it's not yet reached, where I think the potential is very high. Bringing gas into the cities, into Tel Aviv and so on through an urban grid, which I think has great potential and would reduce living costs and thirdly, to develop other uses for the gas including an extension of the petrochemical subject. I think that that process could begin there and I think that it could bring benefits, both in terms of energy security, in terms of reducing carbon (not clear) as you move away from using coal and also in terms of the economy, because the shift could employ a great many people for a number of years and would insure that all the fields discovered in Israel, the ones already discovered and the rest which (not clear) discovered soon, all those could be developed for the benefit of the Israeli economy. Thank you.

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שאל צמח: One question, Nick. We heard some opinions about the price of the natural gas needed for the petrochemical industries. Do you believe that we will have this kind of economic environment which allows us to do that?

ניק באטלר: Yes. I think the demand for chemicals is (not clear) in the region, in Europe, across the world and I think that if you have a regularly available feed stock with a gas from your offshore fields that could be developed. The quality of the gas will determine what you can do with it but I think processing in the petrochemical industry is very advanced now and you can take almost every form of gas and convert it into the petrochemicals that are needed.

שאל צמח: Regarding the infrastructure that you mentioned. Do you think it would be wise to invest in infrastructure (not clear) small households to (not clear) the gas?

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ניק באטלר: Yes. As in most other countries in the developed world. Most of the other countries in the (not clear) now have gas grids that take the gas, certainly into the cities. You may not want or be able to take it to every small village, every kibbutz, but I think you can take it to Tel Aviv and other significant towns in Israel without too much difficulty.

שאול צמח: What do you have to say about the threat that come from the companies that there would be no other discoveries if there will be no export?

ניק באטלר: I think they are misunderstanding. I think that you could give them a price in Israel to bring the gas to the coast, to the beach in Israel that would be equal to the price that they could get elsewhere in the world. I think when you look, and I've seen some reports saying how high the price is in Asia, you have to understand that that price included the costs of transportation

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and converting it into LNG and then back into (not clear) gas. If you take those costs out the margin is pretty much the same. So I think that actually, when the companies find how difficult it is going to be to brake into an export market that is already quite full, I think they would see this as quite a creative alternative.

שאל צמח: Any other questions or comments? O.K.,
Nick, thank you for your participation.
Goodbye.

(סיום ישיבה)