

EXECUTIVE SESSION

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WEDNESDAY, OCTOBER 17, 1979

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U.S. Senate,
Committee on Finance
Washington, D. C.

The committee met at 2:45 p.m., pursuant to adjournment, in room 2221, Dirksen Senate Office Building, Senator Russell B. Long (chairman of the committee) presiding.

Present: Senators Long, Talmadge, Ribicoff, Byrd, Nelson, Gravel, Matsunaga, Boren, Baucus, Bradley, Dole, Packwood, Roth, Danforth, Chafee, Heinz, Wallop and Durenberger.

The Chairman: Let me suggest that we get back to work on these things.

Senator Talmadge: I think thatcuss the cost of that gasohol thing.

The Chairman: What can you give us on gasohol?

Mr. Wetzler: Over the lunch hour, we checked with Dave Foster from the Finance Committee staff, who is the trade expert. He said that it is his opinion that limiting the 40 cent per gallon credit for alcohol to domestically produced acohol would not violate any of our existing trade agreements. However, limiting an excise tax exemption, which is under the

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1 present law, would.

2 So there would not be any problem as far as gas goes,
3 Senator Dole's suggestion that we limit it to domestically
4 produced alcohol. As we stated this morning, that would
5 eliminate the possibility of paying out subsidies for imports
6 that actually increase your balance of trade deficit.

7 The Chairman: What is it, it is a 40 cent per gallon tax
8 credit. How does that work?

9 Mr. Shapiro: It is a 40 cent per gallon tax credit for
10 the production of alcohol for use as fuel.

11 The Chairman: Who takes the credit?

12 Mr. Shapiro: Those who produce it.

13 The Chairman: The producer takes it?

14 Mr. Shapiro: Yes.

15 The Chairman: He has got to find enough taxes to find
16 somewhere to take that credit, has he? How is he going to do
17 that?

18 Mr. Shapiro: Under the proposal, it is a refundable
19 credit.

20 The Chairman: It means that this will come under the
21 Appropriations Committee and the Budget Committee on the
22 floor, won't it?.

23 Mr. Shapiro: The bill does have other refundable
24 credits. In addition, you make modifications to existing
25 refundable credits. So apparently you will have to go to the

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1 procedure that requires you to refer to the Appropriations
2 Committee.

3 Senator Dole: That is another reason for adopting the
4 credit approach rather than the excise tax.

5 Mr. Shapiro: Yes, that is the proposal. To repeal the
6 exemption from the present tax, and substitute thereof a 40
7 cent per gallon credit.

8 Senator Dole: That way we do not subsidize imports.

9 Mr. Shapiro: That would be just on domestic production.

10 The Chairman: All right.

11 Senator Dole: Is that agreed to?

12 The Chairman: All in favor say, aye.

13 (Chorus of ayes.)

14 The Chairman: Opposed, no.

15 (No response.)

16 Senator Talmadge: I think that it is preferable than the
17 other route. What we need to do -- we are burning now a 10
18 percent solution of alcohol and 90 percent gasoline. We need
19 to work toward burning 100 percent alcohol. When Henry Ford
20 first designed the Model T, he intended to use alcohol. Then
21 he found that gasoline was cheaper.

22 I think that this alternative with the tax credit really
23 stimulates the production of alcohol. As all of you know, the
24 Governor of Mississippi two or three weeks ago drove an
25 automobile all the way from Mississippi to Washington, on 100

1 percent alcohol.

2 You can do that now with a minor modification of the
3 automobile engine, which costs two to three hundred dollars.
4 The Brazilian are stepping up that production tremendously,
5 and mandate the automobile manufacturers to produce an engine
6 that will run on 100 percent alcohol.

7 To give you an example of what can be done in this
8 regard, we are building one of these little plants to produce
9 alcohol in Alma, Georgia, right now under the Farmers Home
10 Administration. We can grow four crops of sorghum down there
11 annually on the same land. That will produce 1,600 gallons of
12 alcohol on one acre, 400 gallons to the crop. You can get
13 about two-thirds of the mileage on a gallon of alcohol that
14 you can get on a gallon of gasoline. So, this is going to
15 displace, assuming that we can get people to burn it, over
16 1,000 gallons of gasoline on one acre of farmland annually.
17 You can do the same thing with wood.

18 Senator Dole: Senator Talmadge, I think that the other
19 point was that you want to limit the tax credit to domestic
20 production.

21 Senator Talmadge: Certainly. We don't want to give a
22 tax credit to foreigners. The idea is to stimulate domestic
23 production.

24 Senator Dole: The Treasury may not fully agree with
25 that, but I think they understand that we have the vote.

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1 Senator Talmadge: It would be ridiculous to subsidize
2 foreign production. We might as well give a tax credit to
3 OPEC.

4 The Chairman: We agree to that. Let's go to the next
5 thing.

6 Mr. Wetzler: That comes from Senator Packwood's bill,
7 and we would like to have our usual authority to make some
8 technical amendments in drafting the thing.

9 The Chairman: Without objection, we will accept whatever
10 technical amendments that do not change the purpose of the
11 amendment.

12 What else do you have?

13 Senator Dole: I think that Senator Heinz may want to
14 modify that a bit when he comes. We include what?

15 Mr. Lighthizer: Alcohol made from coal.

16 Senator Dole: That is covered, is it not?

17 Mr. Shapiro: It is not covered.

18 Senator Dole: He can raise that when he comes. Would
19 there be any objection to that?

20 The Chairman: I would object to that because coal can
21 be used as a fuel directly. You can use it in all kinds of
22 situations. You can use coal to heat right inside a house. I
23 have my doubts that we ought to be using it to make alcohol.

24 Senator Dole: He can address this when he comes.

25 Mr. Shapiro: The proposal does have a \$3.00 production

1 induce certain types of energy production, or various
2 conservation credits.

3 Generally speaking, what that meant was that the
4 credits that had the best possibility were those that were not
5 currently being done, but had potential down the road with
6 some additional incentives. As a result of that, you can see
7 that the credits that we tended to select had a very small
8 effect in the first fiscal year, and the reason being is that
9 there is not much production or action in that particular area
10 during the current year.

11 Most of the proposals that tended to have a very large
12 revenue effect in the first year were those areas that had a
13 significant amount of activity already, and did not need an
14 additional amount of tax incentive to continue to do what they
15 are already doing.

16 As with the long-range effects, there are some proposals
17 that have a lot of merit, but when you have \$25 billion, and
18 all the tentative proposals amounting to \$100 billion that the
19 committee had adopted, we had to make some arbitrary
20 determinations. Some were modified, and some were cut back,
21 and there is some method to try to do as much as we could,
22 given that framework.

23 Having made those general comments as to the staff
24 determinations, under residential credits, you can see that
25 all of those amount to \$9.6 billion over the 11-year period,

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1 and the first fiscal year effect is \$67 million. Once again,
2 they are the types of proposals that do not have a current
3 year effect, but yet over the long-term, it is assumed that
4 these incentives would produce enough stimulus to have
5 activity, which will result in the \$9.6 billion.

6 In the conservation credits, essentially what was done
7 was to extent that termination date to 1990, which is the
8 entire period tht we are talking about for the tax program.
9 This has no fiscal effect in the first year, but has \$2.2
10 billion over the 11-year period.

11 The Chairman: Those are the things that are already in
12 effect.

13 Mr. Shapiro: Those are the things that are already in
14 effect right now, but just extending them through 1990.

15 Senator Packwood: I must say, Mr. Chairman, when I
16 talked with Bob and others, most of these credits on this
17 first page, or many of them, were mine, and I have given a
18 fair portion.

19 Number one, right here, I will agree with it. I think
20 this is a place where we could have made the biggest quantity
21 of savings is in conservation. It is also the biggest cost.
22 I would give there, where it is an area where people are
23 familiar, and maybe they will put in insulation with a 15
24 percent credit. I would rather give there than to give it all
25 on the 50 percent credit for wind, solar and geo-thermo, which

1 are indeed good sources, but are unknown, and homeowners are
2 going to need that kind of a credit to go, and they are not as
3 expensive as the conservation one singly.

4 The Chairman: Do you want to run through these, then?

5 Mr. Shapiro: Point number two is just extending heat
6 pumps, an making that eligible for the credit to the extent
7 that they replace electric resistance heating systems as the
8 primary source of residential heating.

9 Senator Ribicoff: Electric resistance heating, suppose
10 the heat pump saves oil where you have oil heat instead of
11 electric heat. Why should there not be that same credit where
12 you put in a heat pump that is auxillary to oil or gas?

13 Mr. Shapiro: Generally what was done there is that when
14 you have it for electricity, you need more oil and gas to
15 generate electricity. This is known as the means to replace
16 something. We are trying to conserve oil and gas, therefore,
17 the heat pumps are used, more or less, as a replacement to
18 conserve. It is just part of the proposal that seemed to have
19 the most efficient source of energy savings.

20 The Chairman: If you take natural gas, and you use that
21 to generate electricity, and then you use the electricity for
22 heating inside the house, you have lost two-thirds of the Btus
23 that can be delivered inside the house. If you had burned the
24 gas inside the house, you would have had three times as much
25 heat inside the house as if you had used it to generate

1 electricity, that is if you use electric resistance heating.

2 Now even using a heat pump, you would be a big loser, if
3 you are using gas to generate the electricity comparing to
4 burning it inside the house. On the other hand, if you had
5 electric resistance heating, and you substitute a heat pump
6 for that, you pick up a chunk of savings. How much of a
7 savings is that?

8 Mr. Shapiro: We are not sure of the exact figure.

9 Mr. Wetzler: We have not calculated any of the energy
10 savings on this. DOE may have some.

11 The Chairman: It is about a 30 percent savings.

12 Mr. Powers: That is correct.

13 The Chairman: At the same time you would be losing
14 energy, even operating a heat pump, if you used the gas to
15 generate the electricity, and then used the heat pump inside
16 the house.

17 Mr. Powers: You would use slightly more, but it is not
18 as far off as you might guess, because the efficiency of the
19 gas in a furnace in a home is in the 60 percent range in terms
20 of delivering heat into the home.

21 Senator Ribicoff: Maybe I don't understand the
22 technicality. I understand that by using the temperature
23 outside in the well, a heat pump saves a considerable amount,
24 whether it is gas, electricity or oil. You are saving a
25 substantial amount of basic energy by using the atmosphere.

1 I don't understand why you have it just to replace
2 electric resistance heating. Electric resistance, gas, or
3 oil, as long as you are saving energy, what difference does it
4 make?

5 The Chairman: I know that if you are working from
6 natural gas, because that is what we are using in Louisiana,
7 and you are burning the gas inside the house, you are going to
8 put more heat inside the house than you do if you burn the gas
9 under a boiler, generate electricity with it, and then if you
10 use it to move a heat pump inside the house, you still will
11 not get as much heat inside the house as if you had burned the
12 gas inside the house to begin with.

13 Senator Ribicoff: But the answer to the Chairman is
14 this: That may be all right if you are just starting anew.
15 What if you now have a house that is not electrically heated,
16 but is gas or oil heated, and then you get a heat pump to save
17 a considerable amount of any energy usage. There is no reason
18 to get people to get rid of their oil and gas just to put in
19 an electrical system. I don't follow that.

20 If it is any good, and it is going to save energy, it
21 ought to be for whatever it substitutes for. I fail to
22 understand.

23 The Chairman: The point is, when Senator Curtis first
24 brought this thing up, you don't gain anything on energy when
25 you substitute a heat pump for an electric heating system.

1 Now, you do gain if you are substituting a heat pump for
2 electric resistance heating because it is a more efficient
3 device than electric resistance heating. So if you are
4 substituting it for electrical, you are making a net energy
5 gain. On the other hand, if you are substituting it for a gas
6 burner, you are not.

7 Senator Ribicoff: I don't understand it that way.
8 Senator Packwood is the expert on this. I don't understand it
9 that way.

10 Mr. Wetzler: Senator Ribicoff, the problem is that it
11 takes about 3 Btus of oil or gas to make 1 Btu of electricity,
12 and heat pumps are run by electricity. So that if you are
13 talking about a question of replacing an electric heating
14 system with a heat pump, then you save energy. But if you are
15 talking about replacing oil or gas heating with electricity,
16 you save energy there is the electricity is generated from
17 coal or nuclear, or hydro, but you lose energy if the
18 electricity is generated from oil or gas, because it takes a
19 lot more oil or gas to make the electricity than it does to
20 heat the home directly.

21 Senator Ribicoff: You are talking about an individual
22 house. I still don't understand the technicalities of it.

23 Mr. Lubick: Given these figures from the Department of
24 Energy, which show that if you have 1,000 Btus of gas, and use
25 that to heat your house, it will produce 600 Btus of heat, so

1 you are starting out with 600. But if you take the 1,000 Btus
2 of gas, that will produce 335 Btus of electricity, and if you
3 use the heat pump that will mean you will produce in the house
4 500 Btus of heat. So for the same 1,000 Btus of gas that you
5 are starting, you are producing only 500 Btus of heat through
6 converting it to electricity and then increasing the
7 efficiency with the heat pump, as opposed to what Senator Long
8 described as the direct use of that gas to heat the house.

9 Mr. Powers: In other words, we do agree that it is more
10 efficient using the gas directly. It just not off by a huge
11 factor.

12 The Chairman: The point about it that the proposal here
13 is to allow them the advantage of the heat pump where the
14 result would be a net energy saving.

15 Mr. Lubick: Of course, the economics of it, Senator
16 Long, as such that even without the tax credit we think that
17 it is highly economical, where you have electric resistance
18 heating, to use the heat pump. You can demonstrate that it
19 will pay for itself even without the subsidy.

20 The Chairman: Frankly, as far as I am concerned, I think
21 that the heat pump is one that we might as well leave out.
22 That is one where we probably could save some money.

23 Mr. Lubick: We would agree with that.

24 The Chairman: In other words, you tend to agree with me
25 that you get enough additional efficiency out of a heat pump

1 that people would buy it anyway.

2 Mr. Lubick: Anybody who has electric resistance heating
3 should buy a heat pump anyway because it will pay for itself.
4 The payback period is a 8.3 years according to the figures
5 that I have. So the investment you make will clearly pay for
6 itself over a relatively short number of years.

7 The Chairman: Why don't you leave the heat pumps out?

8 Senator Packwood: The heat pump is a damn good system of
9 conservation. If you replace if you use it to replace gas
10 heating, and you put in a heat pump, there is not much saving.

11 The Chairman: There is not any. You lose.

12 Senator Packwood: I will take your word for it, you
13 lose. But if you replace electricity you win, and it is a
14 good saving, and it ought to be encouraged.

15 The Chairman: All right, I will go along with that, if
16 that is what you want to do.

17 What else do you have? You have the 10 percent credit --

18 Mr. Shapiro: -- being claimed by landlords, and the
19 reason for that it is like an investment credit for them, and
20 they get the depreciated. So instead of the regular 15
21 percent credit that would regularly be the case, they get a 10
22 percent.

23 The Chairman: This is in the area where the conservation
24 credit lies.

25 Mr. Shapiro: That is right.

1 The Chairman: Then you have this other thing here,
2 eliminate principal residences.

3 Mr. Shapiro: That is so that you can get it on a second
4 residence to the extent that there are savings. It is not a
5 big item.

6 Number five is where you have joint-ownership. You have
7 several situations where more than one individuals owns a
8 house, and may not be able to take it. The second is that you
9 may have some use of some energy jointly by several homes. So
10 we eliminate the joint-owner requirement.

11 The Chairman: Then comes the big one: "Raise the credit
12 to 50 percent and extent out to the year 2000 for solar, wind
13 and geo-thermo."

14 Senator Packwood: This is an important one, Mr.
15 Chairman, an in my mind the most important one. The potential
16 is there on all three of those, solar, wind and geo-thermo,
17 but for the homeowner we have not cracked the surface on this
18 in this country. It is going to take a tax credit big enough
19 that when your gas hotwater heater goes out, and you are in an
20 area that can use the solar hotwater heater, and most areas
21 can -- we can use it here in Washington, D. C. -- you are
22 going to look at it and say: "How much does it cost, and how
23 much of a tax credit will I get, and how quickly will I get my
24 money back?"

25 If you can in a new gas hotwater heater for \$900 or

1 \$1,000, and a solar hotwater heater is going to cost you
2 \$2,200, even though you might rationalize it if you were in
3 business, and thought about depreciation and how long a period
4 of time, you are not going to do it. If you don't have that
5 credit, you are not in most cases going to make that
6 conversion.

7 The Chairman: Then you allow 40 percent to be claimed by
8 the landlord, and that is \$7 million a year, and over a
9 10-year period it comes to \$146 million. Then you eliminate
10 the principal residence, and permit credit for expenditure on
11 any dwelling, at least \$1 million, and \$71 million over the
12 10-year period. The rest of them are small, extend credit to
13 property producing electrical energy, renewal sources. Allow
14 the credit for renewable energy sources, and structural
15 components. Allow the credit for drilling costs of on-site
16 geo-thermo wells, if the taxpayer does not deduct the IDC.
17 Permit joint owners of eligible property to claim credit on a
18 pro rated share of expenditures. The total cost is \$67
19 million the first year, and \$9.630 billion thereafter.

20 If we can hold to that, we will have the genie inside the
21 bottle, at least on that part of it.

22 Senator Packwood: I have given up \$90 billion.

23 The Chairman: That is most generous. The taxpayers will
24 thank you, Senator.

25 (Laughter.)

1 Senator Chafee: Mr. Chairman, could we take a look at
2 some of these things, and let the genie out of the bottle?

3 Mr. Chairman, I would like to talk for a moment, if I
4 could, about furnaces. That is on page 3, Mr. Chairman,
5 following right behind the sheet we are on, and still in
6 residential. What the objective of this proposal is, and I
7 have reduced the figure somewhat to make it more palatable, is
8 to try to get people to put in efficient furnaces, which
9 switch from oil to a much efficient furnace, be it an indoor
10 more efficient furnace, or a more efficient gas unit.

11 There are some statistics that are set forth on what they
12 call in the technical lingo as AFUE, average fuel utilization
13 efficiency. So there is a standard by which they can gauge
14 these things. DOE has this.

15 If you give the credit and limit it to 15 percent on the
16 maximum of a \$2,000 expenditure, thus the maximum credit is
17 \$300. I propose that we limit it until the end of 1985.

18 If we did it that they had to convert, they not be
19 eligible for the credit unless they moved into an oil unit
20 that was what we call 80 percent AFUE, or 75 percent gas.
21 Apparently, the gas always lags behind the oil by five percent
22 in efficiency. That would cost in 1980, \$20 million, and by
23 1985, it could cost \$1.552 billion.

24 DOE has standards, and these are the standards that I
25 have set forth. What is the Department of Energy doing

1 already in this field? Well, the Energy Conservation Act of
2 1975 requires that the DOE set standards for furnaces by
3 January 1, 1981, and my suggestion is that these standards as
4 set are pretty high. There are some suggestions that they
5 will only be able to get to the 75 percent AFUE for oil, and
6 mind you I am going to 80 percent there, or 70 percent for
7 gas, and my standard is 75 percent.

8 I think that by requiring this high standard the savings
9 in oil will be very considerable, and it will be a real
10 incentive.

11 My feeling, Mr. Chairman, and this follows somewhat what
12 Senator Packwood said, that when you go into the higher priced
13 items, the furnaces costing \$1,500, that is where you really
14 come into the value of a tax credit. Mind you, the tax credit
15 is only a maximum of \$300, but I think that that credit will
16 be enough to induce people to take the plunge.

17 So suggest the adoption of this amount. I don't know
18 what the procedure is here, if those of us who are on pages 3
19 on, can only present our proposals by proposing a substitute
20 from page 1. You have put us between a rock and a hard place.

21 Just before we broke for lunch, M. Chairman, as you know
22 we were talking about the additional revenue that is going to
23 come through this whole program due to the fact that we have
24 gone to the 2 percent. I don't know whether it is fair to
25 raise that now. But if the objective is to save fuel oil,

1 here is a real positive way of achieving it, and making a big
2 step forward.

3 Senator Packwood: John, let me ask you a question. On
4 these furnaces, is the argument against it similar to the
5 argument against insulation, that people are going to do it
6 anyway, when their furnace finally goes out and they are going
7 to have to get a new one?

8 Is the kind of furnace that you want them to buy any more
9 expensive than the furnace they would put in anyway?

10 Senator Chafee: Yes. I have set a standard that is
11 going to be higher than the normal standard of the furnaces
12 that will be available.

13 Senator Packwood: Say that again.

14 Senator Chafee: The standard that I have set under this
15 AFUE is higher than the normal furnace that would be sold. It
16 would be more expensive.

17 Senter Packwood: But it will be available.

18 Senator Chafee: It will be available.

19 This does two things. One, it presses the furnace
20 manufacturers to make a more efficient furnace available; and,
21 two, it encourages the purchasers to go out and get the more
22 expensive, and thus better furnace with savings. Something
23 that the purchaser probably would not make that jump to
24 without some kind of an incentive.

25 The Chairman: What you are proposing to do would cut the

1 first year costs from \$100 million down to \$20 million. Is
2 that right?

3 Senator Chafee: That is correct.

4 The Chairman: The long-term saving is not near as much.
5 What you are suggesting would cut the long-term saving from
6 \$2.367 to \$1.562 billion. There would be a saving of about
7 one-third in the long-run.

8 Senator Packwood: Do you have any idea, even the wildest
9 speculation on the energy savings?

10 Senator Chafee: I have it from my resident expert that
11 it would save 24 percent of the fuel consumption based on the
12 current standards.

13 Senator Packwood: You mean 24 percent more than the
14 current furnace?

15 Senator Chafee: That is right.

16 Senator Ribicoff: I think that the Senator from Rhode
17 Island has very important point here. I can only talk about
18 New England, I don't know the rest of the country, you will
19 have homes maybe 40, 50, 60 years old, with old furnaces that
20 are leaky, and are not efficient. Most of these homes today
21 are occupied by people in the lower-middle class, and they
22 really don't have that extra cash to make large investments.

23 The credit to them would give them an incentive to skrimp
24 and save to put in a more effective and efficient furnace that
25 would certainly use a lot less oil than their present

1 furnaces. I would say that Chafee probably, from his
2 experience, and knowing what type of residences he has in
3 mind, realizes this without being an expert in the heating
4 business.

5 Did I reflect your thinking, Senator Chafee, on that?

6 Senator Chafee: My only expertise in the heating
7 business is in paying the bill. You are right, this is a
8 major investment. Most people will stagger along with a
9 furnace. It takes some decision for somebody to buy a new
10 furnace. That is about the last thing that they tend to do.

11 If the roof leaks, they will have to repair it. But
12 buying a new furnace is a major decision. I think that they
13 will buy a new car, I think, or do most things because they
14 are used to them, but people are not used to buying new
15 furnaces.

16 The Chairman: Could I just suggest that we take a look
17 at the other items, and see what other things, just in terms
18 of priority, we have here on this list, and also on this
19 business list that Senators feel are essential, and must be
20 included.

21 If that is the only item that we are talking about, then
22 I can take a different attitude about it. If it means
23 that this just the one that breaks the dam, and leads to
24 adding a lot more ---

25 I personally get settle for what is on this list. Some

1 of these things would be nice. I personally could settle for
2 what we have here, but also could go along with Senator Chafee
3 if that is all we have to add to it.

4 Now let's talk about the other things that people feel we
5 will have to include, because I think the staff and Senator
6 Packwood would be willing to go along with that. On the other
7 hand, I am sure that he wants to consider other people's
8 problems, too.

9 So why don't we look at the other things that we have got
10 in here, and see which ones we think would have to be
11 included.

12 Senator Chafee: I think that it is a good way to
13 proceed, Mr. Chairman.

14 Senator Durenberger: Mr. Chairman; may I start right at
15 the top and ask Senator Packwood to explain why 15 percent,
16 other than the money, is better than 25 or 30 percent?

17 The Chairman: What are you talking about?

18 Senator Packwood: He is talking about insulation. The
19 present law is 15 percent. I started out at 50 percent. You
20 see the costs on it.

21 Senator Nelson: Which sheet are you on?

22 Senator Packwood: Page 3, "Residential Energy Credits,
23 Staff Recommendations."

24 I started out at 50 percent. The reading I have done
25 convinces me that 50 percent, from an energy standpoint of per

1 barrel saved, would be a bargain. It was a bargain a month
2 ago, and it is double a bargain now. But if you look at the
3 right-hand figure on the cost, and this is one I was more
4 willing to give on than on solar, geo-thermo, or wind, because
5 at least people are familiar with insulation, and maybe with
6 the present law, which is 15 percent, they can be convinced to
7 go along and do it.

8 Maybe there is the validity of the argument that if you
9 raise it to 50 percent, and everybody wants it, the price will
10 go up on supply and demand, the credit will get eaten up in
11 the additional cost anyway, and it will not be any cheaper to
12 the householder.

13 For a variety of reasons, I gave on it, although it is
14 still the single biggest energy saver. But you have to cut
15 some place.

16 Senator Durenberger: I was curious to know if you had
17 experience from the three or four years that we have had some
18 form of incentive go on. I can understand the 50 percent, but
19 it would seem to me that at some point you get so low that you
20 have lost the incentive, which is, I take it, the real reason
21 we are doing this.

22 The Chairman: The way it stands right now, your best
23 insulating material seems to be fiberglas. They are buying
24 all the fiberglas that we have the capacity to manufacture
25 right now, aren't they?

1 Mr. Shapiro: It is pretty close to capacity, that is,
2 for a good part of the year, keeping in mind that a lot of the
3 fiberglass is used for new construction. So you just have so
4 much that is available to retrofitting. To the extent that
5 new construction goes down a little, and that may be the case
6 in the near future, then you will have more fiberglass
7 available for the retrofits.

8 However, as we understand, there is a sufficient backlog
9 that is available that is taking this increased capacity.

10 The Chairman: So until such time as we have greater
11 capacity of fiberglass, you cannot do all the insulating that
12 you would like to do. When they get more capacity, you might
13 do some more, but for the time being all you tend to do is to
14 overload the market and tend to run-up the price. Isn't that
15 right, Mr. Lubick?

16 Mr. Lubick: That is our view, Mr. Chairman. We think,
17 furthermore, that as fuel prices are going up, it is going to
18 make it imperative for homeowners to insulate, and that in
19 itself has had probably a greater effect than the credit. But
20 certainly with the existing credit, along with the high
21 prices, people are beginning to insulate.

22 Then, we are promoting it through our weatherization
23 programs, and the like, and we think those approaches,
24 especially those that will provide some loans or upfront
25 financing will have a very substantial effect in this area.

1 Mr. Wetzler: We understand that they have expanded their
2 capacity quite a bit in the last few years. During the fall
3 and winter, they run at 100 percent of capacity. In the
4 summer, they run at a much lower rate of capacity because
5 people don't think of insulating in the summer. Because the
6 stuff is so bulky, they cannot produce in the summer for the
7 winter, it would just cost too much money to store it for
8 those months.

9 So if you could somehow encourage people to insulate in
10 the summer, there would be some excess capacity, but somehow
11 they only think of doing it in the winter or fall.

12 Senator Wallop: I talked with Senator Boschwitz, who 18
13 months ago was in the business, and still is in the business,
14 he says that as far as his companies are concerned, he simply
15 cannot keep enough insulation in stock to take of the demand
16 there is. He is looking all over the country for it all the
17 time.

18 I think that the 15 percent, if any percent is
19 reasonable. At least for the moment, I don't think we could
20 get a cost benefit on this. I think that the energy saving is
21 a little bit hopeless until the supply is such that the people
22 are buying it anyway.

23 Senator Packwood: All I would say on that is that there
24 is more agreement among people who have looked at conservation
25 of energy than there is on solar, or there is agreement on

1 heat pump. Study after study, after study says that this is
2 the place.

3 Now, whether or not you would get 500 million barrel
4 savings for a 25 percent credit, or 1 billion barrel savings
5 for a 50 percent credit, that is speculative. When we were
6 working on these, we had those charts showing the estimates we
7 had, and the dollars per barrel saved. I don't have those
8 here now. Insulation was one of the cheaper savings.

9 Senator Wallop: I one hundred percent agree with you to
10 the extent that the stuff is there, and not being bought, or
11 is outside the reach. To the extent that we do not have the
12 capacity to serve the market that exists in the country, you
13 are not going to get a benefit from something that is going to
14 be bought anyway.

15 Senator Packwood: I am not arguing to go over 15
16 percent. I am answering Dave's question earlier. I have
17 given on this one, and it is a tremendous saving. I am
18 willing to pass it on, and go on with the present law.

19 Senator Durenberger: May I go beyond fiberglas, and just
20 ask about storm-windows, weather-stripping and the
21 alternatives to see if there is a legitimate argument for a
22 higher credit for products that are available on the market?

23 Senator Packwood: There may be, but again the biggest
24 saving is insulation, ironically.

25 Mr. Shapiro: Our information indicates that they are not

1 at capacity, and there is sufficient supply available of
2 storm-windows and those other areas.

3 I will tell you what went in staff thinking in this
4 regard is two aspects. One, with oil prices going up the way
5 they are, there is that incentive to go out and do as much
6 insulation as you can. In effect, that acts as a credit,
7 because to the extent that the prices go up, and you are
8 saving energy, you are getting a return.

9 The second reason is that one of the very important
10 aspects about incentives is to let people know that they are
11 getting something. The fact that any salesman who goes out
12 and talks to a customer about it, say: "You are getting a tax
13 credit of 15 percent." That is the incentive. Twenty or 25
14 percent, sure, would make it a little bit more, but given the
15 supply, given the price of oil, and the fact that there is a
16 tax incentive, led us to think that this is an area where we
17 just leave the existing 15 percent, and use the revenue in
18 other areas where you really need a high inducement to get
19 sufficient savings.

20 The Chairman: Why don't we vote on the 15 percent. That
21 is a big item of saving.

22 Mr. Shapiro: That is in th present law. We are making
23 no change in the present law. The committee does nothing,
24 except to extend the existing date.

25 Mr. Lubick: We have some problem, Mr. Chairman, with the

1 notion of extending the date because we think that it is very
2 important to get people to do this as quickly as possible. If
3 there is a deadline, so to speak, of 1985, we think people may
4 move quickly while they still get the tax credit.

5 The Chairman: Let me just suggest, then, that we do what
6 we did with some other things. We had the date go up to 1985,
7 and we carried figures out on through on the theory that we
8 expect to extend, but we will take a look at it and see by
9 1985 whether we ought to extend it. We did that with regard
10 to other credits, and we could do it on that.

11 Mr. Shapiro: The present law is 1985, so what you would
12 be doing in that regard is to keep the present law. We
13 extended the present law from 1985 to 1990, and it is just a
14 committee decision on that.

15 The Chairman: Why don't we do that? You could show in
16 your figures that we would anticipate that it would be
17 extended in due course. I guess it would help with the
18 figures not to show that we are going to extend it after 1985.

19 Mr. Lubick: It is better to show the figures, and not
20 enact the credits.

21 (Laughter.)

22 The Chairman: That would take care of Mr. Chafee's
23 amendment if we did that.

24 Senator Heinz: Mr. Chairman, just a question on the
25 numbers here. The \$2.2 billion is that present law which

1 expires in 1985, or is that an extension through 1990?

2 Mr. Shapiro: That is an extension from 1985 through
3 1990.

4 Senator Heinz: Thank you.

5 The Chairman: We don't need the \$2.2 billion, then.

6 Mr. Shapiro: YOU don't need it today, that is correct.

7 The Chairman: We can take a look at that in 1985?

8 Mr. Shapiro: That is right.

9 The Chairman: That saved money.

10 Senator Packwood: It does not cost anything in Fiscal
11 80, and we don't have to show anything for 1990. It does not
12 cost anything in the whole bill and that is a good way to show
13 it.

14 The Chairman: All in favor say, aye.

15 (Chorus of ayes.)

16 The Chairman: All opposed, n o.

17 (No response.)

18 The Chairman: The ayes have it.

19 Now, these other items that we have down here, if someone
20 wants to suggest that this item ought to be in, let's talk
21 about it and see how we might work it out. I hope that we
22 will not have a motion to keep them all in, but maybe we can
23 accommodate some.

24 Senator Dole: Mr. Chairman, the Republicans this morning
25 discussed, an I don't know whether we brought up Senator

1 Chafee's furnace --

2 Senator Chafee: We did.

3 Senator Dole. That has been taken care of?

4 The Chairman: We have not voted on it. We have to wait
5 and see what other things people want to add.

6 Senator Dole: We also brought up the wood-burning
7 stoves, which is an item that President Carter has a deep
8 interest in, and other Senators who travel in New Hampshire
9 from time to time.

10 (Laughter.)

11 Senator Dole: Does the Treasury support the credit for
12 wood-burning stoves?

13 Mr. Lubick: That probably could make up for the
14 elimination of the 1986 to 1990.

15 Senator Dole: I think that if we don't put it in here,
16 it will be offered on the floor. I think that we have the
17 same argument that they are not available. You have a waiting
18 period before you can buy a stove.

19 Is there an efficiency standard built into the credit, if
20 they meet a certain efficiency standard before the credit
21 applies?

22 Mr. Shapiro: It is part of the Administration proposal
23 that it has to be airtight. As to anything more than that, I
24 am not sure.

25 Senator Dole: The Administration's proposal is airtight?

1 Mr. Shapiro: Yes.

2 (Laughter.)

3 The Chairman: In this area, if we do this, we are going
4 to be asked to go along with the coal stove also.

5 Senator Heinz: I am not going to propose that you go
6 along with the cal stove. I want you to go along, Mr.
7 Chairman, with a coal furnace, which either a new installation
8 or a conversion. A new installation where there was no
9 furnace before, such as in a new home, because the goal,
10 obviously, is to convert.

11 The Chairman: They estimate on the coal stove that it
12 would cost \$226 million over the period.

13 Senator Heinz: \$226 million if it is 25 percent, Mr.
14 Chairman, that is right.

15 The Chairman: On the wood stove, can we settle on this
16 15 percent credit through 1985. If we can, it is a lot less
17 than having to allow for the chimneys.

18 Senator Dole: I think that it is the Administration's
19 recommendation, isn't it?

20 Mr. Shapiro: Yes.

21 Senator Dole: The stove and not the chimney; is that it?

22 Mr. Shapiro: We think that the Administration proposal
23 went through 1982, but as it was proposed in the committee it
24 went through 1985.

25 The Chairman: Did the Administration suggest that 25

1 percent credit including chimneys?

2 M. Shapiro: No, sir.

3 Mr. Lubick: We suggested the 15 percent credit for the
4 airtight efficient wood-burning stove through 1982.

5 Senator Dole: You don't worry about the chimneys. They
6 can handle their own smoke.

7 The Chairman: Well, I suggest that we stay with their
8 1982 figure, and then that would cut the cost down. What
9 would it cut the cost to?

10 Mr. Shapiro: It would cut the \$359 down to \$185 million.

11 The Chairman: That helps that figure.

12 Now, if we do that, and then on the coal stove --

13 Senator Heinz: Not a coal stove, but a coal furnace,
14 because these are central heating systems.

15 The Chairman: If we take the coal furnace, would you go
16 along with a 1982 date on that? We are talking about the wood
17 stove until 1982, and if you would take the same figure, that
18 would help us with our figures.

19 Senator Heinz: Is that at 25 percent?

20 The Chairman: No, 15 percent.

21 Senator Heinz: The difference between the wood stoves
22 and the coal furnaces is as follows: (a) they are central
23 heating units, not wood stoves for a room; (b) they are
24 manufactured and in supply. Twenty percent of the homes in
25 Great Britain are heated with this kind of central heating

1 unit. (c) It does not deforest the United States. It would
2 put some minors to work in Pennsylvania and a lot of other
3 places as well.

4 The Chairman: If we take your 25 percent rate, then can
5 you settle for the 1982 date, which is the same date we have
6 on the other thing?

7 Senator Heinz: I think that it is a good start, without
8 prejudice to its extension at a later date. I think that it
9 makes sense.

10 The Chairman: Take your 25 percent, but take the 1982
11 date, which is the date that the Administration has on their
12 proposal. How much would that save us?

13 Mr. Shapiro: We are checking this.

14 Senator Heinz has changed his proposal, so let me clarify
15 it with him.

16 We only assumed that you were talking about retrofit, and
17 this may have been your original proposal, and it means homes
18 in existence on April 20th, 1977. That is the rule that is in
19 the law for the other conservation.

20 Senator Heinz: What would it cost just for retrofitting
21 or conversion?

22 Mr. Shapiro: You are talking about a 25 percent rate, or
23 15?

24 Senator Heinz: Twenty-five. Over two years, it is going
25 to be nickels and dimes.

1 Mr. Shapiro: It is less than \$100 million.

2 The Chairman: Then, those two would cost less than just
3 for the wood credit for the five year period. This would then
4 get us to where it would only cost us \$100 on the coal stove,
5 and the wood stove would be \$185 million. That plus the
6 replacement furnaces, which would be a total \$1.550 billion,
7 and the whole group of them would come in at about \$1.8
8 billion.

9 Senator Dole: Has the Administration looked into wood
10 furnaces?

11 Mr. Lubick: No, we restricted ourselves to the stoves.

12 Senator Dole: Seriously, it is about the same matter. I
13 will send for the brochure that I have. Again, they are
14 central heating, and are more economical than airtight
15 woodburning stoves. I will have the information here in a
16 second.

17 The Chairman: I should think that if we could hold
18 ourselves to that, that would contain the costs pretty well.

19 Mr. Lubick: Senator, apropos the residential credits, as
20 you know we had some serious reservations about Senator
21 Packwood's 50 percent credit for solar, which is number seven
22 on the first page, because we do have a solar bank that is
23 moving in this direction. But if you are going to do that,
24 you have a revenue loss there of \$4.7 billion.

25 The Chairman: Are you talking about what I am talking

1 about?

2 Mr. Lubick: I am talking about something that is going
3 to save you some money.

4 The Chairman: I am talking about what is on page 3.

5 Mr. Lubick: On the very first page.

6 The Chairman: I want Senator Packwood here.

7 Senator Dole: He will be right back.

8 Senator Nelson: Is that business energy?

9 Mr. Lubick: No, it is residential.

10 The Chairman: Show us the thing that you had in mind,
11 now.

12 Mr. Lubick: The proposal is for a 50 percent credit for
13 what is active solar equipment, and that costs \$4.7 billion.
14 Now, we have a proposal to encourage passive solar, and we
15 would suggest that if you turn the 50 to 40, and put in the
16 passive solar, which costs about \$328 million, you would have
17 a very substantial incentive for the active solar, and at the
18 same you would get a foothold in for the development of
19 passive solar, which we think has great promise, and can
20 produce some very significant savings. It would be a very
21 worthwhile innovation.

22 The Chairman: I think that the passive solar thing would
23 cost us a tremendous amount of money. How does he get it at
24 that price?

25 Mr. Shapiro: It is not that it is a lot of money, it is

1 just that we are not quite sure how it is to work and be
2 administered.

3 Senator Chafee: I would think that every single house
4 would have to be inspected individually?

5 Mr. Lubick: No.

6 Senator Ribicoff: Pardon me for a second, but are you
7 talking about passive solar for new homes?

8 Mr. Lubick: That is right.

9 Senator Ribicoff: If someone is building a new home,
10 they would automatically put in passive solar. Why give them
11 a credit for passive solar?

12 Mr. Lubick: I don't think that that is true, Senator
13 Ribicoff. Basically, it requires new design, and it requires
14 the installation in the home of solar collection areas, and
15 absorbers, and heat distribution devices.

16 Senator Ribicoff: Have you ever seen a passive solar
17 home? Do you know what a passive solar house is personally?

18 Mr. Lubick: Yes.

19 Senator Ribicoff: I have a passive solar house, and I
20 don't know what is complicated. If you built it facing south,
21 and you have an architect or a builder designing a house, he
22 is going to use the southern exposure, and he is going to
23 build it with all the savings in uses of energy. I don't know
24 why you have to give a man a credit to build a passive solar
25 house. It is just common sense to do it, and it is not any

1 more expensive to build either.

2 Senator Packwood: Mr. Chairman, I did not realize that
3 when I went away for five minutes, Mr. Lubick was going to try
4 to take away 10 percent of these credits. I saved you many
5 millions of dollars next door, when I was talking to the
6 Governor of Pennsylvania, and you try to do this to me while I
7 am gone.

8 Abe, I agree with you completely. The principle
9 television commentator in Oregon got interested in solar
10 energy several years ago, and began to study it. He is now
11 building himself a passive solar house, and he would agree
12 with you completely. It makes common sense when you are
13 building, to build it the most efficient way you can from a
14 solar standpoint.

15 Secondly, California has got these passive solar
16 credits, and they are an incredible headache. If you put in a
17 window that is three times bigger than you would otherwise put
18 in for heat purposes, do you get two-thirds of an additional
19 cost on the credit. The Treasury Department tried to draw
20 some passive solar regulations before, and they came before
21 the House, and they could not come up with anything that made
22 sense.

23 I would oppose very strongly trying to reduce the
24 non-passive solar credits to 40 percent, so that we can have a
25 10 percent passive credit, or whatever it is he wants.

1 The Chairman: I think that we might just save some money
2 on leaving out the Administration's proposal on passive solar.
3 That would help to balance the budget.

4 It seems to me as though this might be a pretty good
5 compromise, if we would take the items that remain, and if we
6 would go along with the suggestion on wood stoves to 1982 with
7 15 percent, then take the 25 percent credit for the coal
8 furnace, but extend that through 1982, and that would only
9 cost \$100 million compared to a cost of twice that, and then
10 take the Chafee proposal and modify it, which only costs \$20
11 million the first year, as I understand it.

12 Senator Chafee: That is correct.

13 The Chairman: Then it would cost in the long-run \$1.558
14 billion.

15 Mr. Shapiro: That would be through 1985.

16 The Chairman: That would be a total of \$1.837 billion.
17 It would be an initial cost of about \$51 million. If we could
18 settle for that, I think that it would be a pretty good
19 compromise, based on what we are looking at.

20 How does that sound to you, gentlemen; does that sound
21 all right?

22 All in favor say, aye.

23 (Chorus of ayes.)

24 The Chairman: All opposed, no.

25 (No response.)

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1 The Chairman: That settles, then, the residential part.
2 Now, let's talk about the business part.

3 Senator Dole: I did hand the information on the wood
4 burning furnace to the Administration. You can analyze that,
5 and we can talk about it later.

6 The Chairman: Let's see if we can do some further
7 compacting on the business energy credits.

8 Senator Nelson: I would like to raise the hydro
9 question.

10 The Chairman: First, let's take a look and see what you
11 are suggesting here, now.

12 Do you have that before you, gentlemen, the joint
13 committee suggestion about the credit for solar and wind.
14 They would suggest that we have \$10 million cost the first
15 year, increase to 20 percent through December 31, 1990, and
16 add process heat for solar.

17 Senator Packwood: Mr. Chairman, that is another one that
18 I gave substantially on. We did have 50 percent credit when
19 the bill was initially introduced for business solar and wind.

20 I do know from my experience in talking to several of the
21 businesses in Oregon that are now experimenting with solar --
22 two of the principal ones that are doing it, are doing it in
23 conjunction with a Department of Energy grant. They are not
24 yet prepared to go ahead on the capital investment required
25 for the return, without some incentive.

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1 Again, however, because I thought the residences were
2 more critical, I kept that at 50 percent, and lowered the
3 solar and wind and raised the geo-thermo to 20, so that they
4 were all the same for businsses, on the thought that there is
5 a difference, indeed. The average person in business, if they
6 are thinking about putting in solar or geo-thermo, or wind,
7 probably understand depreciation and investment tax credit,
8 and how long it will take to pay for itself, and whether or
9 not it is worth it.

10 I am not fully convinced in my mind that 20 percent is
11 enough, but again we were trying to cut revenues every place;
12 and I agreed to that cut.

13 The Chairman: We appreciate the gentleman's cooperation.

14 That is one and two. Then, the ocean thermo, I am sure
15 that Hawaii thinks that it is a good idea. That is 20 percent
16 non-refundable energy credit for that.

17 Hydro-electric, that would be a 10 percent non-refundable
18 energy credit for facilities with a 25 megawatt generating
19 capacity existing at dam site, and new sites where no
20 improvement is involved, fish-passageways and power houses,
21 and generating equipment would be covered, and all dams are
22 excluded.

23 Senator Nelson, do you want to talk about that?

24 Senator Nelson: Yes, I will want to move that the amount
25 be \$1.4 billion rather than the staff recommendation, and that

1 facilities that exist and dams should be exempt from the
2 Federal tax. I know that Treasury argues against that.

3 What kind of facilities are now exempt: residential,
4 real property for family site units; sport facilities, such as
5 football stadia -- I cannot imagine a football stadium being
6 more important to have tax-free bonds issued than energy --
7 convention or trade show facilities; airports; docks; warfs;
8 mass commuting facilities; parking facilities; storage or
9 training facilities directly related to any of the foregoing.

10 Here is one right on point. Under the current law,
11 sewerage for solid waste disposal facilities, or facilities
12 for the local furnishing of electric energy or gas are allowed
13 to issue tax-exempt bonds. So I think tht this should apply
14 to the low-head hydro.

15 Then there is a technical amendment, and that would mean
16 that this would be \$1.4 billion estimated instead of \$1
17 billion.

18 In a letter, recently, Professor Peter Brown, Director of
19 the Energy Law Institute, which developed these provisions,
20 concludes: "In the last analysis, S.1762 performs two very
21 worthwhile if not remarkable functions. It removes inequities
22 and ambiguities in the tax law, while at the same time
23 creating incentives to develop a renewable energy resource,
24 which is heavily encumbered by man-made constraints."

25 I pointed out that there is a much higher cost, and a

1 higher recommendation for solar. I am for solar. I think
2 that it is very important. I think that there is passive
3 solar, which will be very important. There may be
4 break-throughs, and that is going to be in the long-run far
5 bigger than low-head hydro. Nonetheless, based upon the
6 figures --

7 Does the committee have any figures of how many barrels
8 of oil per day will accrue from the tax credits for solar?

9 Mr. Shapiro: No, Senator, we do not have any savings
10 estimates. I am not sure if DOE has. But we have not made
11 any.

12 Senator Nelson: Senator Packwood's own estimates were
13 154,000 barrels of oil. So just comparing the benefits, I
14 would point out that the estimates of the committee are that
15 we would get 81,000 barrels a day at a cost of \$1.4 billion,
16 whereas solar and wind would get 154,000 barrels at a cost of
17 \$3.5 billion. So the cost/benefit ratio of low-head hydro, if
18 these figures are all accurate, are better.

19 Senator Packwood: Gaylord, on many of the credits that
20 we went through, I would agree with you. Earlier, I indicated
21 that on conservation credit, insulation, there was a lot of
22 money to be saved, and also co-generation. The conclusion we
23 have reached, however, is that the homeowners are more
24 familiar with, the things that business is more familiar with,
25 we would give less incentive to, than the more isotheric things

1 that will work, but are going to have to have a bigger boost.

2 I know that your figures are right, and I know that
3 low-head hydro saves a lot of oil. I am not goin to argue
4 with you. But the philosophy of the higher credits for the
5 wind, solar, and geo-thermo was that we needed the higher
6 credits to make people do it.

7 Senator Nelson: I don't quarrel with that. We did not
8 put in a 20 percent. We did not put in a 20 percent addition
9 for low-head hydro. We put in 10 percent, and we simply based
10 it on the study of this institute, who is satisfied that if
11 you went to 10 percent, and you had a depreciation of 20
12 years, and you had industrial revenue bonds, they would put in
13 operation X number of these.

14 I am not quarreling against your proposition because I
15 think that it is awfully important to get started on solar.
16 Once it becomes relatively common, once architects are used to
17 doing it, you may very well in seven or eight years drop the
18 credit, as we have done in the past on various things, and it
19 will go on its own motion.

20 I am not quarreling with the Senator. I am simply saying
21 that for \$1 billion, the people who have done the study don't
22 think that you will put these low-head hydros in business, but
23 for \$1.4 billion, you will. So I am proposing that the \$1.4
24 billion be adopted, and that the credits that we included in
25 the bill that I have gone through be included in this manner.

1 The Chairman: Let me just suggest that we use the same
2 approach here that we used when we discussed the residential
3 credits, and that we hold this in abeyance until we see how we
4 can work it out within the balance of the overall content of
5 the bill, and take a look at these other items, and see what
6 changes, if any, we will have to make in them.

7 The co-generation, that would be first year costs of \$14
8 million, and overall costs of \$356 million.

9 Industrial heat pump, 10 percent non-refundable credit
10 through 1982, where at existing facilities.

11 Building and structural components making the energy
12 property eligible for regular credit.

13 Public utilities -- it is a negligible cost there -- to
14 make energy credits available for solar, wind and geo-thermo,
15 ocean-thermo, and so forth.

16 Affirmative commmitment -- that is a big item -- that
17 would allow energy credits to expire in 1982 for construction
18 projects or engineering sites that have been completed, and
19 construction applied for by 1982, binding contracts for
20 construction, at least 50 percent of the cost of the property
21 by December 1985, and property placed in service by December
22 1990.

23 Then bio-mass.

24 Senator Boren: Mr. Chairman, could I ask one question on
25 co-generation?

1 In the original amendment, I think you excluded oil,
2 which I certainly agree. I think that you included existing
3 gas-fired in the original amendment. In other words, not new
4 gas-fired burner, because we don't want to encourage people to
5 go out and put in more. But you allowed the co-generation
6 credits on existing.

7 Senator Packwood: That is correct.

8 Senator Boren: I notice that this is not included now in
9 the amendment, or is that just a misreading of it?

10 Mr. Shapiro: In the original, Senator Boren, it was
11 both oil and gas.

12 Senator Boren: Both oil and gas were included?

13 Mr. Shapiro: Oil, gas and other sources. There was no
14 limitation.

15 Senator Boren: I see.

16 Mr. Shapiro: Upon talking to the Department of Energy,
17 and others industrial sources, it was not clear that you had
18 savings when you used oil and gas for co-generation. In some
19 cases, yes, and in some cases, no, because in certain areas
20 when you used oil and gas, you were using the oil and gas
21 where it would be cheaper for the energy savings, and not to
22 have co-generation.

23 In the generation of electricity, you were sometimes
24 using oil and gas, where you would otherwise be using nuclear
25 or coal, when it came from a utility. Now there are some

1 utilities that are converting or using a lot of nuclear coal
2 now. So if you used oil or gas, you would be inefficient from
3 an oil or gas standpoint in some parts of the country, and
4 other parts of the country, in Oklahoma, as we know, in your
5 particular case, where you don't have nuclear or coal that is
6 on-stream right now, it is down the road, you would not have
7 energy inefficiencies.

8 Senator Boren: I would agree about oil. I understand
9 why you exclude oil.

10 In other words, if you have an existing natural gas
11 facility, wouldn't you gain by encouraging them to use
12 co-generation. I am only talking about existing.

13 Mr. Shapiro: Only to the extent where you have nuclear
14 or coal electricity. In other words, if you use your gas in
15 co-generation for electricity, and the gas replaces coal or
16 nuclear ---

17 Senator Boren: We are talking about existing only.

18 Mr. Shapiro: If you were not using co-generation, you
19 would be using it from the utility. I am not talking about
20 Oklahoma, but I am talking about the general case, because
21 in Oklahoma, you are right.

22 Senator Boren: We don't have any other.

23 Mr. Shapiro: Let's take an area outside of Oklahoma, New
24 York, for example, and other areas, where if they use gas
25 co-generation, they would be replacing a utility use of

1 electricity which uses nuclear or coal.

2 Senator Boren: I agree with oil, but I think on gas,
3 where there is no other alternative, you would want to
4 encourage people to use co-generation during the time of the
5 life of an existing facility. Could you write it to say,
6 "Except where the energy otherwise used would be produced by
7 non-oil or gas sources," or something like that?

8 Mr. Shapiro: I would like DOE to comment on this because
9 they have more of the long-range. Let me make one comment
10 that went into some of the staff thinking in this regard.
11 When you have a new co-generation that goes in now, you are
12 talking about somewhere in the neighborhood of 20 years.

13 It is true that in some parts of the country you may only
14 have gas, but sometime down the road, it is expected that
15 these utilities will have more availability of nuclear or
16 coal, and at that point it would be inefficient.

17 Now it was very difficult for us to look at different
18 regions and say that in some parts of the country it was
19 inefficient, and other parts it was efficient, and how to
20 fashion a general rule. Overall it seemed inefficient, or
21 that is the information that we were getting.

22 I would like DOE to comment more specifically, because
23 they are more familiar with that than we are.

24 Mr. Bullard: The conditions under which co-generation
25 would be used are so diverse that it would be administratively

1 quite difficult to determine where a particular co-generation
2 unit would displace oil and gas at a utility rather than
3 displacing coal and nuclear. It would depend on the time of
4 day the unit is operated, the load profile of the utility,
5 whether it is summer or winter peaking, and that sort of
6 thing.

7 We are starting to get our first experience in
8 determining that through the Fuel Use Act of 1978, which
9 requires coal conversion in new large industrial boilers.
10 There the analytical burden of proof to show a net oil savings
11 for a waiver, that burden of proof is on the applicant who
12 knows his local utility, knows the local times of day that his
13 factory will be operated, and it is just going to take some
14 time, I think, even to quantify the administrative difficulty
15 that might result from such a provision that did not limit
16 simply to coal fired, or non-oil or gas fired co-generation
17 units.

18 Mr. Shapiro: Let me make an observation to the
19 committee. This is not a major revenue effect. The revenue
20 is approximately \$50 million over the 11-year period. So it
21 is not a revenue factor. The sole question that was raised
22 was whether it was energy efficient.

23 So it is not a decision that should be viewed just from a
24 revenue point of view, because \$50 million over an 11-year
25 period was not a major factor. It was the information that

1 came from DOE and some public utilities as to the inefficient
2 use of oil and gas.

3 Senator Boren: I would not want to make an issue of it.
4 I will abide by whatever Senator Packwood, or Senator
5 Ribicoff, who was the original proposer of this.

6 I would understand about oil, but it would seem to me
7 that with the existing natural gas that it would always be
8 efficient. I have a little trouble figuring out how logically
9 using the energy you are already burning to co-generate on
10 down the line, instad of buying electricity, no matter how it
11 is produced, whether it is produced by coal, nuclear, or
12 whatever.

13 I am all in favor of converting to coal. I am strongly
14 in favor of that. But I think that this could be a
15 substantial saving, and this is a country where this
16 conversion will not go on for quite some time, and where, in
17 fact, the Administration is now saying, "Stick with natural
18 gas for a while."

19 The Chairman: If you want to make a concrete suggestion,
20 we will, of course, consider it.

21 Senator Boren: I would propose that we include in
22 co-generation credit existing natural gas, but not oil.

23 The Chairman: How much would that increase the cost?

24 Mr. Shapiro: It is not a big revenue factor. Over the
25 11-year period, we are talking about \$50 million. so it is

1 not a revenue factor that is involved here.

2 The Chairman: About \$5 million a year, or something like
3 that.

4 Mr. Shapiro: This is only through 1982. So it is \$50
5 million through 1982, that is the existing proposal.

6 The Chairman: Why don't we note that down in addition to
7 the \$500 million that it would take to do the Nelson proposal.
8 We will see if we can come up with a package on this one like
9 we did on the other one.

10 Senator Gravel: Relative to the Nelson proposal, as you
11 recall, I had asked staff to prepare some considerations on
12 the hydro. As I understand it, Senator Nelson can correct me,
13 his is a small hydro on an existing site, which is 25
14 megawatts or less. There is more potential in small megawatts
15 for the new sites. In fact, the Corps estimates that we could
16 double the amount of hydro-power generation just with small
17 hydro.

18 We could even go more than that by considering all hydro.
19 An interesting facet is that yours is a credit plus tax-exempt
20 for the private utilities that will sell that, as I understand
21 your proposal. Is that correct?

22 Senator Nelson: A tax-exempt revenue bond.

23 Senator Gravel: Most of the hydros are with
24 municipalities, so you are talking about the private sector
25 only accounting for 37 percent of that. So by and large, you

1 will not be getting any benefit from the municipalities,
2 because they cannot use a credit. They don't pay taxes.

3 So if we really wanted to give a push to hydro, the way
4 to do it would be to give a tax-exempt bond status to all new
5 hydro development.

6 I have a chart here, and perhaps Mike can pass out these
7 papers.

8 Senator Ribicoff: If the Senator would yield.

9 I wonder, Gaylord, why you just use the existing
10 sites, and why not, like Senator Gravel suggests, all sites,
11 old and new. I am just curious.

12 Senator Nelson: There is a difference between Alaska and
13 the rest of the country. We used existing sites because the
14 Corps of Engineers proceeded to survey the country, and they
15 concluded that there are 5,000 dams in place on rivers around
16 the United States not producing power of less than 25
17 megawatts that could be put into production under certain
18 circumstances.

19 So they are already there. They are not producing, and
20 they are not going to produce unless there is some inducement
21 to do so. DOE, then, directed the Energy Law Institute to do
22 a study to see what should be done, or what needs to be done
23 to induce these dams to be put back into production. They
24 came up with a proposal saying, this is what needs to be done.

25 Yes, you could go to very large ones, and one may argue

1 in favor of that, but the fact is that they are in business,
2 making a profit, producing power now, which is quite different
3 from a situation in which you have a bunch of sites where
4 there is no production being produced.

5 Next, if you are going to go for new dams in the Lower
6 Forty-Eight, I would guess that most of them that were ever
7 productive sites, in first place, did have dams in them.
8 There are hardly in my state that did not, although you could
9 put some more in. You run into a very serious environmental
10 fight right off the bat, if you are going to start a whole
11 series of dams in this country on new sites at 25 megawatts or
12 less.

13 The cost factor of building a brand new dam is very
14 significant. I don't know whether or not these inducements
15 that are in here would cause anyone to build a new dam any
16 place. The Energy Law Institute addressed just the question
17 they were asked to address by DOE, and that is the question of
18 what has to be done in order to put these sites into
19 production.

20 Forty percent of the electrical energy in Wisconsin in
21 1940 was coming from dams. Now it is four percent, and we
22 have dams all over the place which are not in use. I think
23 that most placed in the United States at one time or another
24 had in production the economic sites for electricity early on.

25 If you took Senator Gravel's provision, and applied it

1 only to Alaska, because Alaska was not producing electricity
2 50 or 60 years ago, it would not cost you anything. It would
3 not cost you anything anyway, because if they do something, it
4 is something they would have done without this inducement. I
5 would have no objection, but I would not want to open up the
6 question of brand new dam sites all over the United States.

7 Senator Ribicoff: I am at a loss to understand. If it
8 is all right for existing, why isn't it all right for new,
9 whether it is Alaska, Wisconsin or Virginia?

10 The thought occurs to me, those of us who our state, and
11 I think every Senator does, if you walk the rural areas, or go
12 along a stream at certain times of the year especially, you
13 will see the old disintegrated dam sites that used to generate
14 hydro. Along those same streams, there are many spots with
15 falls, and other opportunities to build a additional small dam
16 sites. This is about the cheapest place where you could
17 generate new energy sources from the snows, the rains, from
18 the actions of the stream, without using any fossil fuels
19 whatsoever.

20 If your original proposal is good, to the extent that
21 you could do it, go ahead with the old. But there is nothing
22 to lose by dealing with the new. I am at a loss to understand
23 why you want to confine it to the old. It is a good idea, I
24 for with you, but I see nothing wrong with extending it to the
25 new.

1 The Chairman: We are trying to squeeze this thing down
2 to where we get these costs back within something that we can
3 live with. At the moment, we are trying to reduce the cost of
4 these things. Senator Nelson is saying that what is proposed
5 here cuts back far too much of what he thinks ought to be done
6 just with the existing sites.

7 Now, goodness know, I have the suggestion that we have
8 at least two locations or two sites in Louisiana where people
9 would like to put in new facilities, but when you look at the
10 cost. I would think that if the cost of \$1.4 billion, if we
11 get started in this thing and it works out, that it is enough
12 credit to do the job, and I assume that what the Senator is
13 suggesting is that he is asking for enough credit, so he
14 thinks it will do the job, and it will prove itself, and then
15 we can decide whether we should go into it in a much bigger
16 way. But if we go into it in a much bigger way, it is going
17 to mean a much bigger revenue loss, isn't it?

18 Senator Gravel: But I think, Senator, we are losing
19 sight of something very important, and I think everybody is
20 aware of this. In the Northwest part of the United States is
21 where you have the cheapest power, and the reason is because
22 of the hydro-development on the Columbia River. That has been
23 corrupted to a good degree by nuclear.

24 Where there was another area of cheap power was TVA, and
25 that has been corrupted by larger costs for coal and for

1 nuclear. But that is where the cheap power of this country
2 was. The reason for that is, this chart shows it here. When
3 you build a dam, during the course of building the dam, you
4 suffer inflation like any other project. But you finish the
5 dam, it is in place, and the inflation only applies
6 henceforward on the cost of operations, which is 10 percent of
7 the cost. Most of the money goes for service, 90 percent goes
8 to service your debt.

9 Today, this country is just about to enter an era where
10 on the Columbia River and TVA, we are going to be paying for
11 the great dams that we built in the '30s, and the cost of
12 energy is going to come down to 10 percent to what it was.
13 There is nothing that is as cheap as a capital investment in
14 hydro.

15 The other fact of this is that when you talk of the new
16 facilities, I am well aware that there is anathema in the
17 environmental community to go into big dams. I am not talking
18 about that for the South Forty-Eight, because when you say
19 25-megawatts or less, you are literally restricted, and we can
20 put that restriction, because we have done this in another
21 committee, you are restricted to 25 miles.

22 When you get a plant that will produce 25 megawatts, it
23 has got to be within 25 miles of the community, otherwise it
24 throws your economics off. So your margin there is that if it
25 is going to be around a town in New England somewhere, it has

1 got to be within 25 miles of the community that it is going to
2 sell the power to, otherwise it is not going to be economic.
3 That is the limitation of 25 megawatts.

4 Senator Nelson is correct. We were virgin in Alaska, so
5 we never got a chance to build any large hydro. We are
6 probably the best site, if not in the United States, in the
7 entire world for a hydro. We have already authorized phase
8 one for a 1,500 megawatt plant. We are prepared in Alaska to
9 forget the Federal government, to go do it ourselves, not ask
10 for a sou from the Federal government, but in order to make it
11 work we need tax-exempt bonds.

12 So if we don't get the tax-exempt bonds, it is going to
13 force us to come back to the Treasury, and get the money like
14 everybody else. With this little incentive, we would do it
15 ourselves.

16 I would be prepared to compromise, to modify the
17 amendment that would say, just Alaska, if you want, for the
18 large hydro. For small hydro, just for Alaska, or just small
19 hydro, new and old, for the balance of the United States.
20 That way we will mitigate the environmental hassle that will
21 take place.

22 Senator Ribicoff: If the Senator would yield, you are
23 not doing anything that change the environmental laws.

24 Senator Gravel: Nothing at all.

25 Senator Ribicoff: If it does not comply with the

1 environmental laws, you will not get the permit to do so,
2 either from the state environmental agency, or the Federal.

3 Senator Gravel: That is right.

4 Senator Ribicoff: What you are talking about, I don't
5 know where the loss is. You certainly could put these
6 facilities into place a lot sooner, it seems to me, than you
7 will do solar, wind, or geo-thermo.

8 The Chairman: Mr. Lubick wants to be heard.

9 Mr. Lubick: Mr. Chairman, we estimate that the revenue
10 cost from the additional use of tax-exempt bonds as Senator
11 Gravel is proposing would be about \$1.4 billion.

12 Senator Nelson: This is for the new proposal?

13 Mr. Lubick: This is for adding Senator Gravel's addition
14 to your proposal, would add to the cost of your proposal \$1.7
15 billion.

16 I would like to point out that doing it through the
17 tax-exempt bond route is an especially inefficient way of
18 doing it. It is not a free ride, because the rest of the
19 taxpayers do have to pick up the tab. It costs state and
20 local governments a lot of money, because the more bonds that
21 are outstanding, the more state and local governments have to
22 pay in interest costs. The slippage in the loss in the
23 tax-exempt bond method has compared to the tax credit method
24 is something that should be taken into account.

25 The minute you move from what this committee has done --

1 Senator Ribicoff, you more or less wrote the industrial
2 development fund rules --

3 Senator Ribicoff: That is right, but the difference is
4 this. Here you are talking about using industrial development
5 bonds for something absolutely vital to the American economy.
6 As Gaylor read off what industrial bonds are, which I have
7 always fought, they are nothing that can compare with the
8 absolute national interest when you are doing it for energy,
9 especially when you are using our streams, using snow and
10 rain, and the natural water that flows through our rivers and
11 streams in this country. Then, of course, if you don't build
12 any, you don't lose anything.

13 Mr. Lubick: The question is, we all agree with the
14 priority. We all agree with the desirability of what you are
15 doing. But our industrial development funds, the way to bring
16 it about, are they the most efficient, cost effective way to
17 do it. We think in every one of these areas, where you are
18 talking about industrial development funds, if you want to
19 devise a better incentive, you can get much more "bank for the
20 buck" through a direct credit, all of the money for which goes
21 to the purpose you want to accomplish, whereas in the
22 industrial development fund, you are losing about 25 percent
23 of the tax subsidy, which is just going off elsewhere, and is
24 not being used to accomplish the purpose.

25 It is a highly inefficient way of doing it, as you,

1 yourself, so articulately described in 1969.

2 Senator Ribicoff: I would rather use industrial
3 development bonds for this purpose, than for a football
4 stadium, or a lot of other reasons where you use industrial
5 development bonds. Here you are talking about a number one
6 priority.

7 Mr. Lubick: I am not holding any brief for football
8 stadiums. I don't know that anybody is proposing to replace
9 the football stadia exemption with this one. But the fact of
10 the matter is that a lot of those items that you listed in
11 your legislation in 1969, such as the stadia, are items that
12 have some governmental relationship, a normal governmental
13 function, a normal action of the municipality. They are all
14 pretty much within that category.

15 Now, we are dealing with a different sort of thing. The
16 question is, if we want to subsidize that activity, let's do
17 it in the most efficient way, so that the dollars that we are
18 using are going straight to the production of the benefits.
19 An investment credit for the building of an hydro-electric dam,
20 all of that money is going for that purpose.

21 Senator Ribicoff: My feeling is that you are going to
22 get more energy, more efficient, more effective than you will
23 with synthetic fuels. To the extent that you could use what
24 Gaylord Nelson and Senator Gravel are talking about, I think
25 that you could get a lot more, and a lot cleaner, and a lot

1 better for the country than the synthetic fuels.

2 Mr. Lubick: If that is so, shouldn't all of the money
3 that you are willing to spend go directly to accomplish the
4 purpose you are trying to accomplish, namely, subsidize the
5 building of that dam, rather ---

6 Senator Gravel: But, Mr. Lubick, 60-some odd percent of
7 it is in municipal hands. They cannot take a credit. That is
8 the reason why we use the device of the tax-exempt bond. Only
9 37 percent will go, under this proposal, to the hydro
10 potential, and can look at this chart, and you will see that
11 in the nation, we almost have 600 gigawatts, and the hydro
12 capability ---

13 This is the Corps of Engineers now, and the hydro
14 capability is 153 gigawatts. You see the hydro here is 54.
15 You see fossil fuels is 400, and 54 nuclear. We can go three
16 times nuclear with hydro. Most of it is small hydro, I might
17 say, in present and new sites.

18 Under this proposal, the only effort that is going to be
19 made, you are only going to touch less than 37 percent of this
20 because that is the part that is in private hands.
21 Municipalities, which you are saying are so great to handle
22 tax-exempt, that is exactly who I am trying to have handle
23 tax-exempt.

24 Mr. Lubick: But, basically, there are other ways to get
25 the incentive there, whether it is to the municipality or to

1 the user of the energy. There are other direct ways to get
2 the subsidy there, and all of that subsidy is going to go for
3 the purpose that you want.

4 Senator Nelson: You see, this was not designed by me.
5 This was designed by the Energy Law Institute. They were
6 using economists, lawyers, experts of all kinds. In response
7 to the DOE arrangement, they had to do this investigation. So
8 I claim no expertise. There may be better ways to do it.

9 They considered each of the factors that we put in the
10 bill. It was their idea, run through their computers, and the
11 computers in association with one of the universities,
12 Dartmouth University, and out of this model they concluded
13 that these are the things that need to be done. So I have no
14 pride of authorship, or original concept here. It is theirs.
15 I know of nobody else who has made the study, or run it
16 through computers. It produces a significant amount of
17 energy.

18 If you have an idea on how better to use whatever the
19 cost of the industrial revenue bonds would be applied in a
20 different way, I would be willing to get a hold of the Energy
21 Law Institute, and ask them will this provide the inducement.
22 I am concerned about the inducement, and the amount produced
23 here for the cost projected is pretty good, compared to
24 everything else that we are doing.

25 The Chairman: Let me just suggest that we come back to

1 this. Senator Nelson's suggestion would increase the cost of
2 the staff recommendation by \$500 million, and Senator Gravel's
3 would increase the cost by another \$1.7 billion. We will take
4 a look at these other things, and then let us see if there is
5 something that we can trim down. If not, let's take a look at
6 the other suggestion by adding some things on. Hopefully, we
7 can do like we did with the first one, the residential part,
8 and we can get it down to one figure.

9 On the wood, you have some suggestions there, including
10 the \$3.00 production credit for gasification, which will run
11 to \$2 billion. Could I ask how much of that is the
12 \$3.00 credit for wood gasification?

13 Mr. Shapiro: Almost all of that is the 40 cent gasohol
14 credit that the committee has already agreed to.

15 The Chairman: We have agreed to that already.

16 Mr. Shapiro: You have already agreed to that, that is
17 right.

18 Senator Talmadge: Mr. Chairman, I have a suggestion in
19 that regard. I think that it will reduce the cost. We have
20 already acted on the alcohol tax credits. I would suggest
21 that the \$3.00 production tax credit qualifying processed wood
22 fuels, only new plants gone up after the effective date of the
23 credit previously agreed to by the committee, and only wood
24 processing where the output of the refining process yields a
25 product 40 percent higher in energy content, that is Btus,

1 than the raw material.

2 I would further recommend limiting the credit to five
3 years, from 1980 to 1980. The estimated cost of this
4 amendment, according to the joint committee, is \$286 million.
5 I realize, of course, any of these estimates are just drawn
6 out of thin air. They don't know any more what it is going to
7 cost than I do, and I don't have the vaguest idea. But I do
8 know what it will save. It will save \$27 per barrel on
9 imported petroleum.

10 The Chairman: Will that reduce the cost, and if so, by
11 how much?

12 Mr. Shapiro: It would increase the cost by \$286 million.

13 Senator Talmadge: How would it increase, when it is only
14 processed wood?

15 Mr. Shapiro: We have nothing in the proposals that deals
16 with solid fuels other than dealing with wood that is
17 processed into a liquid fuel or a gaseous fuel. You are
18 talking about a production credit for solid fuel that is
19 processed.

20 Senator Talmadge: Yes.

21 Mr. Shapiro: The suggestion that is in the staff
22 recommendation gives an additional 10 percent investment tax
23 credit for that.

24 Senator Heinz: Mr. Chairman, can I really understand
25 what we are talking about in plain English. Is the 10 percent

1 tax credit for burning something lik Presto logs. Is that
2 what we are talking about here?

3 Mr. Shapiro: It is something like that. In other words,
4 something where you have processed wood.

5 Senator Heinz: Logs that people buy, and put in their
6 fireplace? Is that what we are talking about?

7 I just want to know in plain English what we are talking
8 about.

9 Mr. Shapiro: It is that type of thing, yes.

10 Senator Heinz: So it is logs made out of wood chip.

11 Mr. Shapiro: Yes.

12 Senator Heinz: As opposed to solid bio-mass.

13 Mr. Shapiro: That is right.

14 Senator Heinz: Thank you.

15 We have a lot of trees in Pennsylvania, Mr. Chairman,
16 that compete with these products. Maybe we should have a
17 similar tax credit for cord wood.

18 Senator Nelson: I don't know much about this, although
19 it was my understanding that that is a different process, and
20 that the tax credit only applies so long as the product has an
21 energy efficiency of 40 percent in excess of burning the
22 wood straight. Is that correct?

23 Senator Talmadge: That is right.

24 Here is what I am trying to do, Mr. Chairman. The
25 experts that have studied this matter, and we have some down

1 at Georgia tech, and other areas of the country, estimate that
2 we can produce 12 percent of our energy in this country from
3 wood. That was the original source of energy, of course,
4 during the days of our forefathers. Then we discovered gas.
5 Then we discovered coal. Then we discovered petroleum. We
6 went to more efficient methods.

7 They have found now that you can take wood, and you can
8 make alcohol out of it. They are building a plant now in New
9 Hampshire to have public utilities use wood exclusively. Wood
10 is a very efficient source of fuel. It is environmentally
11 sound. It is nearly as polluting as some other forms for
12 energy.

13 You can take wood and dry it, and pelletize it, and it
14 makes it competitive with coal in areas where it is used.
15 Much of it is being wasted at the present time. We have
16 low-grade hardwood for which there is no market whatever.
17 Much of our wood we are leaving on the forest floor as waste
18 wood.

19 I think that this offers an enormous opportunity to
20 utilize wood as a substitute for imported energy.

21 The Chairman: Let's hold that in abeyance, then, and see
22 that other items are going to be suggested.

23 Senator Matsunaga: Mr. Chairman, while we are on
24 bio-mass, I suggested at an earlier meeting, and it was agreed
25 to by the committee tentatively, that utilities would be

1 included. I note that utilities have been included.

2 Mr. Shapiro: That is correct.

3 Senator Matsunaga: Also that the date of construction of
4 the utility was April 1977. If the credit were to be on the
5 \$3.00 production, and I was wondering whether we could give
6 them an alternative of either taking the \$3.00 production
7 credit, or the ITC credit. In this way, we might make only
8 one applicable, so that we might save some money on it.

9 The Chairman: What do you advise about that, Mr.
10 Shapiro?

11 Mr. Shapiro: The effective dates are 1-1-80. These are
12 facilities in production in the future. Senator Matsunaga is
13 proposing to go back to the date the original energy plan was
14 introduced in 1977, and it would be very costly to do that.
15 One of the reasons why it was not in the staff recommendation
16 is because the revenue cost was not available for purposes of
17 the \$25 billion that we had, because if they went ahead and
18 have done it since then, it means that it was cost effective
19 for them at that particular time.

20 Therefore, we are making all of these proposals effective
21 January 1.

22 Senator Matsunaga: What happened the last time, you will
23 recall, when the President announced his program in April of
24 1977, then back in Hawaii and in other areas, I am sure, there
25 were utilities as well as other private industries which went

1 into the construction of bio-mass and other alternative use
2 equipment, and then instead we came out with an effective date
3 of November of 1978, I believe.

4 Mr. Shapiro: The bill was signed in November.

5 Senator Matsunaga: Of 1978.

6 Mr. Shapiro: That is right.

7 Senator Matsunaga: Was that September or November?

8 Mr. Shapiro: I cannot remember. The committee made some
9 decisions in September, and the bill became effective.

10 Senator Matsunaga: I think that it was November, as I
11 recall now.

12 So those utilities and industries which started
13 construction after April 1977, but prior to November 1978,
14 could not come in for that credit. Of course, we are not
15 asking that they be granted their investment tax credit, but
16 that at least the privilege of producing more and be given the
17 \$3.00 production credit, if the equipment and the facilities
18 were installed after April 1977, and qualify for the \$3.00.

19 The Chairman: You want to bring in the new plants that
20 were being built at the time.

21 Senator Matsunaga: Yes

22 The Chairman: How much would it cost to do that?

23 Mr. Shapiro: This proposal, as we understand it now, is
24 limited to just bio-mass, which would be about \$10 million. I
25 was under the impression that it was for everything. We just

1 checked back and that is not the proposal. So it would
2 be limited, as we understand it, to bio-mass and the revenue
3 costs would be somewhere around \$10 million.

4 The Chairman: That is over the 10-year period?

5 Mr. Shapiro: Yes, it is over the 10-year period.

6 The Chairman: I think that this is something that we
7 could agree to.

8 Senator Heinz: Mr. Chairman, I would like to raise the
9 issue of the gasohol excise tax exemption. As I understand
10 the staff recommendation, they are saying that they recommend
11 an excise tax exemption for gasohol from bio-mass from wood,
12 and bio-mass other than wood. But it does not include coal.
13 Is that right.

14 The Chairman: That is right.

15 Senator Heinz: Mr. Chairman, it seems to me that it
16 would be very logical to include ethanol from coal. I gather
17 that the objective of our entire bill is to produce just as
18 much in the way of substitutes for imported oil as we possibly
19 can. I would urge the committee to consider including the
20 excise tax for gasohol produced from coal.

21 The Chairman: Let me make this point.

22 We already have a \$3.00 production credit for
23 liquefaction and gasification of coal. That is one of the
24 items that is supposed to do a great deal in the synfuels
25 area. Now, coal is a fuel already. We are already using

1 coal. You burn it right inside houses.

2 We went along with you on your coal burning furnace.
3 Here you are talking about taking a usable energy, and
4 converting it from one form of energy into another form of
5 energy, which is different than it is to take bio-mass, which
6 ordinarily you would not be using at all, and making it into a
7 useable form of energy.

8 Furthermore, if you are going to do this for coal by
9 providing the same advantage for coal as you do for the
10 bio-mass, you will put the bio-mass out of business, because
11 it would be a better deal to use coal to this with, than
12 it would be to use these other materials, which otherwise
13 would be going to waste.

14 Senator Heinz: Mr. Chairman, if it is so good, I assume
15 we all want the least cost approach to producing gasohol.
16 Now, is that not right?

17 The Chairman: I have not heard the rest of it. Go
18 ahead, and we will see if it is right.

19 (Laughter.)

20 Senator Heinz: I don't believe that the chairman is for
21 anything else but the least cost approach of producing
22 something. It seems to me that, very simply, if we are going
23 to subsidize through an excise tax exemption the production of
24 alcohol for the production of gasohol, we should treat
25 everything alike.

1 I hear everything the chairman is saying. But I what I
2 gather he really wants to do is give something other than coal
3 special treatment, special advantage. I just want equal
4 treatment.

5 The Chairman: Senator, it is like providing a tax credit
6 for someone to take oil and make natural gas out of it. You
7 have got coal as a fuel, which we will be using the way it is
8 now. We have this \$3.00 production credit in here. Frankly,
9 if you are going to put the same tax credit to make alcohol
10 out of coal that you are provided for these other farm
11 products, and the waste wood, then you can just forget about
12 using these surplus farm products because by giving coal that
13 big advantage, coal will push the others out of the market.
14 It will squeeze them right on out of the market place.

15 Now coal is simple to use as a fuel anyway. We plan to
16 burn it as coal. We are also saying, "All right, we will give
17 you a \$3.00 tax credit liquefaction, that is to make it into
18 oil, or gasoline, or alcohol, I guess."

19 Senator Heinz: Mr. Chairman, could I check something
20 with the staff.

21 First of all, I know that the so-called Danforth \$3.00
22 per barrel tax credit applies to gasification of non-wood
23 bio-mass, and it applies, therefore, to the gasification of
24 coal. Is that not correct?

25 Mr. Shapiro: It is coal liquefaction and gasification.

1 The \$3.00 tax credit goes to both coal liquefaction and
2 gasification.

3 Senator Heinz: That does not include, as I understand
4 it, but correct me if I am wrong, methanol?

5 Mr. Shapiro: We understand it does, yes.

6 Senator Heinz: You understand that it does include
7 methanol?

8 Mr. Shapiro: Yes.

9 Senator Heinz: Secondly, what would be wrong, since
10 nobody is advocating doubling up on incentives, with having a
11 program where if somebody does not want the \$3.00 per barrel
12 tax credit under Senator Danforth's bill, but chooses to
13 produce methanol from coal, that they get equal treatment
14 under this legislation. They are not, therefore, eligible,
15 Mr. Chairman, for the \$3.00 per barrel Danforth tax credit.

16 The Chairman: Well, we have been proceeding, and I think
17 correctly, on the basis that coal, we have a lot of it, but it
18 is an exhaustible resource. It is an incentive resource that
19 we are using now.

20 So we felt, well, to make the use of liquefied coal, and
21 the gasified coal, we think that about a \$3.00 per barrel
22 production credit -- It is \$3.00 per barrel that you are
23 talking about, isn't it?

24 Mr. Shapiro: Yes. The \$3.00 per barrel is equivalent to
25 approximately \$5.50 price increase because it is a credit

1 against the tax, whereas your 40 cent on the gallon is
2 equivalent to about \$16.80 cents a barrel.

3 The Chairman: We are saying that, well, that would be
4 about what we think it would take to bring them along.

5 These things have been geared to what we think it would
6 take to bring on those sources of energy, and use them for
7 these purposes.

8 For example, Mr. Talmadge suggested that we try to bring
9 on shale, and he proposed that we have a \$3.00 tax credit a
10 barrel for shale. Now, if you are going to follow the logic
11 that the Senator from Pennsylvania is suggesting, you would be
12 giving them a \$16.80 tax credit, because that would be 40
13 cents multiplied by 42 gallons per barrel. So you would be
14 giving them a \$16 tax credit to bring on shale, rather than a
15 \$3.00 tax credit.

16 You have given the \$3.00 tax credit for liquefaction, and
17 what should that possibly be based on other than the thought
18 that this is what it would take to do it.

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1 Senator Heinz. Mr. Chairman, it was passed. I think we
2 all remember that it seemed like a reasonable number because we
3 couldn't afford any more. It wasn't tied to any econometric
4 model. It was the development of the original Administration
5 proposal of \$3 per barrel for shale and then people said, well,
6 if they are going to do it for shale, why not do it for everything
7 else.

8 I don't mean to take the committee's time and I don't mean
9 to drag this out. Tell me where my logic is wrong. We want
10 to produce just as much gasahol as we can. Coal, biomass other
11 than wood, and wood can all be used to produce gasohol. We
12 shouldn't have any objection to using any of those sources.

13 Why shouldn't we give the same incentive for gasahol
14 produced from any of those sources? As long as we eliminate
15 any overlap or duplication, Mr. Chairman -- and I am for
16 eliminating the \$3 on any, \$3 per barrel on any coal that is
17 turned into gasahol -- I honestly don't see what the problem is.

18 The Chairman. If you provide --

19 Senator Heinz. May I ask the staff a question, Mr. Chairman?

20 The Chairman. If you provide that much tax credit -- and I
21 think you are wasting your time to provide the same thing for
22 your biomass and for your surplus foreign price because they
23 aren't going to be used. Isn't that right?

24 Mr. Lubick. I think that is the ideal if you are dealing
25 with something that would be wasted and discarded anyway, a

1 product that won't be useful, then we want to give an incentive
2 to encourage its use. Whereas, presumably in the case of coal
3 we are dealing with a useful fuel.

4 Senator Heinz. But let me ask Treasury what is the idea of
5 do you want to produce the maximum amount of gasahol or not?

6 Mr. Lubick. We want to not necessarily produce maximum
7 amount of gasahol. We want to produce the maximum amount that
8 is economically desirable.

9 Senator Heinz. All right, if you are afraid I guess that
10 we will produce too much gasahol from coal and everything else
11 with this level of tax credit, why not reduce the tax credit?
12 But why should you have the difference?

13 Mr. Lubick. One of the things we are trying to do is to
14 reduce our reliance on imported oil as a fuel source. And to the
15 extent that we can encourage the use of other fuel sources, it is
16 desirable. The coal is already an alternative fuel source.

17 Senator Heinz. It is not. It is sitting in the ground. It
18 is a potential fuel source just like biomass. It is a potential
19 fuel source. There isn't any car running on commercially available
20 ethanol from coal. There isn't even one plant built to produce
21 ethanol from coal. There are lots of plants built to produce it
22 from biomass.

23 Mr. Lubick. There is plenty of that potential for using the
24 coal if not for running cars, for doing other functional uses
25 in our society that consume it as energy. And I think that is

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1 different from the biomass situation.

2 Senator Heinz. I listened carefully. I really don't
3 understand the argument except there seems to be the argument
4 by the Treasury that they would rather have a high tax credit
5 on biomass and none on coal. The experience for Treasury is
6 incomprehensible to me, and increased tax expenditure when for
7 a smaller tax expenditure if you adjust it we will get more for
8 a lower tax expenditure. This is the first time I have ever heard
9 Treasury argue for an inefficient --

10 Mr. Lubick. Actually, Senator Heinz, our proposal in the
11 area of coal liquification is through price guarantees and loans
12 through the Energy Security Corporation, which we think is going
13 to be more efficient in that area than the tax credit.

14 We think we can do that job through these other programs
15 that have been advocated more efficiently than through a tax
16 credit.

17 Senator Heinz. Mr. Chairman, maybe we should just get some
18 kind of a feeling of the committee on this.

19 Senator Dole. Mr. Chairman.

20 The Chairman. Well, all of those who think that you ought
21 to give what amounts to a \$16.80 subsidy to use coal --

22 Senator Heinz. It is for everything. The motion I would
23 suggest, Mr. Chairman, is that whatever it is we do for biomass
24 other than wood and wood as ethanol, we do the same thing with
25 coal.

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1 The Chairman. Well, those who agree with that raise your
2 hand.

3 (Show of hands)

4 Senator Dole. The last time this came up we reduced -- I
5 think we had coal in it in the Senate bill and it got dumped in
6 Conference but it would be 10 cents rather than 40 cents, as I
7 I recall. Senator Ribicoff suggested lasttime --

8 Mr. Wetzler. I think in the finance Committee you had coal
9 in and then Senator Percy had a Floor amendment which took it out,
10 and increased the thing for everybody else.

11 Senator Dole. They had different treatment then, though.

12 Mr. Wetzler. I think it was the Senate floor that took
13 coal out.

14 Senator Byrd. Mr. Chairman.

15 The Chairman. Yes, Senator Byrd.

16 Senator Byrd. Eight Virginia communities have developed the
17 Southeastern Public Service Authority. Now these eight communi-
18 ties are the City of Chesapeake, the City of Franklin, the City
19 of Norfolk, the City of Portsmouth, the City of Suffolk, the
20 City of Virginia Beach, the County of Isle of Wythe, and the
21 County of South Hampton.. These communities have a combined
22 population of approximately 800,000 persons. Now, the purpose
23 of the Southeastern Public Service Authority is to develop a
24 facility, is to build a facility which will convert urban waste
25 into energy. Now, the urban waste is mainly garbage. So the

1 proposal is to convert garbage into energy.

2 Now, that can be done by the issuance of tax exempt bonds
3 under the present law. The problem arises for this authority,
4 however, is that the energy which will be produced from the urban
5 waste, the major customer for that energy will be the Norfolk
6 Naval Shipyard.

7 Under existing law tax exempt bonds cannot be utilized if
8 a government unit is the purchaser of the product. But this
9 project would save over 2,000 barrels of oil per day.

10 What I am proposing is that this Southeastern Public Service
11 Authority, consisting only of municipalities, two counties and
12 six cities, that it be permitted to use industrial development
13 bonds on the same basis that it can be used as if they were not
14 selling the product to a government unit.

15 Now, not only would this facility get rid of urban waste
16 and create additional electricity or additional energy and save
17 over 2 million barrels of oil per day, but it would also mean that
18 the Navy, Norfolk Naval Shipyard, would not need to come to
19 the Congress for some several hundred million dollars to develop
20 its own facility if this project cannot go through.

21 Here is a letter from the Navy which states that this
22 plant, proposed plant, fired by municipal waste, would provide
23 the Norfolk Naval Shipyard with steam and electric service.
24 And it is of particular interest to the Navy because "it would
25 make one of our principal shipyards almost independent of fuels

1 for steam and electric energy."

2 It just seems so logical, Mr. Chairman and gentleman of the
3 committee, that these eight municipalities should be permitted
4 to go forward with this project, and they cannot go forward with
5 it if they are not given tax exempt status for the bonds. They
6 would have tax exempt status for the bonds under existing law if
7 they were selling the product to a private public utility. But
8 because they are selling it to the Navy they would be denied under
9 existing law the right to use tax exempt bonds.

10 Now, a hearing was held on this matter and in the hearings
11 the Joint Committee estimated a revenue loss of \$3 million in
12 FY 1980 and that would go up to \$125 million in FY 1984, not
13 just for this project but for any similar project that might be
14 developed as the result of this legislation.

15 The Chairman. Mr. Lubick?

16 Mr. Lubick. Mr. Chairman, we have been trying to work with
17 Senator Byrd to explore what ways there are to bring this par-
18 ticular project to fruition, because I think we agree with him
19 that it is a highly desirable project to complete. We are still
20 exploring with the Revenue Service the possibility of ruling
21 administratively that this does not rely on the credit of the
22 United States. That is one of the questions, is whether this is
23 in effect a federally guaranteed tax exempt bond which we have
24 een trying to avoid, and the committee has been trying to avoid
25 generally. But I think one of the questions there is whether the

1 purchaser, the Navy Yard, is going to take the energy in all
2 events. And I think there is a question there. And if we can
3 resolve that question, why, we can solve that problem. But the
4 bill as drafted, Senator Byrd, goes beyond the existing provi-
5 sions. Leaving aside the question of who the taker of the
6 electricity is, it goes beyond existing law in that it permits
7 the financing not only of the part of the facility which deals
8 with the processing of solid waste, but goes to the integrated
9 manufacturing process which includes facilities that don't have
10 anything to do with the waste recovery.

11 It is my understanding, and I don't know that that is
12 essential for the particular project, that the Portsmouth Navy
13 Yard is interested. So we think the bill as drafted would,
14 because it is so inclusive, would involve a very substantial
15 revenue loss. What was the figure you had? What was it? Over
16 a billion dollars?

17 Mr. Shapiro. Over an 11-year period it gets up to \$1.9
18 billion because it keeps increasing.

19 Mr. Lubick. I think a large part of that is because the bill
20 goes beyond the particular requirements of this project and is
21 going beyond the solid waste problem to include the financing of
22 facilities that can be operated to generate current regardless
23 of whether it is made from solid waste or not, or fueled by solid
24 waste. So I think the narrowing of that would help considerably.
25 And we are still trying to explore with the Service the possibility

1 guaranteed basis but only to the extent that the Federal Govern-
2 ment is the purchaser of current if it is produced, then I don't
3 see any policy problem with it. But if it goes beyond that to
4 the financing of generators and other items that don't have
5 anything to do with the solid waste, then I think we have a
6 serious problem. That is where you build up your revenue loss.

7 That, I think, is going too far.

8 Senator Bradley. Mr. Chairman, I would like to be very
9 supportive of Senator Byrd's amendment and I wondered if he woul
10 object to modifying it in two respects: In one respect, providing
11 that the energy produced from the facility would not have to be
12 utilized in an area contiguous to the plant, but you could use it
13 in an area not contiguous to the plant.

14 The second modification, that the purchaser would not have
15 to be the Federal Government but could be any governmental unit.

16 Senator Byrd. Well, I would have no objection to modifying
17 the proposal in that respect proficing it didn't result in the
18 defeat of the proposal.

19 The Chairman. Well, now, if you did that that would probably
20 increase the cost of it, wouldn't it?

21 Mr. Shapiro. I am not familiar with Senator Bradley's case
22 as such. I was just getting ready to focus on what Don Lubick
23 was discussing with Senator Byrd. Let me comment on it first.

24 There is one aspect I think Don raised that would cause a
25 problem in Senator Byrd's case. As I understand it is a

1 guaranteed take or pay contract and Don said they feel it does
2 not have any serious policy implications as long as it doesn't
3 have a guarantee. I understood it was a form of guarantee. I
4 think except for that one point --

5 Senator Byrd. I don't think it is a guarantee.

6 Mr. Shapiro. I guess the real question is is the agreement
7 being worked out a take or pay agreement, in which case the IRS
8 may view that as a guarantee. If that is not the case, then I
9 think what Don is saying is that they would accept it from a
10 policy point of view. They would have no problem.

11 He only raised one question and that is the guarantee.

12 Mr. Lubick. We also have the other questions as to what
13 facilities are --

14 Mr. Shapiro. I am talking about just the Virginia one, in
15 other words, narrowing it to the Virginia case.

16 Senator Byrd. Well, why not put the Virginia case on the
17 same basis as if they were selling to a private company?

18 Mr. Lubick. That is the question. Now the bill as drafted,
19 as we understand it, goes beyond the Virginia case to include
20 facilities that are beyond the solid waste disposal facilities.
21 It includes, as I understand it, generating facilities and other
22 facilities that are not part of the solid waste disposal portion.

23 Senator Byrd. Well, isn't that an integral part of the
24 process?

25 Mr. Lubick. It is not under the existing financing provisions,

1 Senator Byrd. In other words, it is my understanding that what
2 you were seeking was essentially equally with the existing law
3 regardless of who the customer is, whether it be the United
4 States, a State and local government, or a private user.

5 Senator Byrd. Yes. Okay.

6 Mr. Lubick. And on that limited basis our only concern was
7 one of the principle of federal guarantee, and that is what we
8 were trying to work around. But the bill as drafted goes
9 considerably beyond that. That is why it has a substantial
10 revenue price tag on it. Without that, limited to this original
11 objective of the Federal Government, it being a qualifying taker
12 and not destroying the tax exempt nature of it, then the revenue
13 factor is rather small and our objection was simply on the
14 principle that federally guaranteed bonds shouldn't be exempt.

15 The Chairman. Well, why don't we just vote on the principle
16 and perhaps you can draft the amendment to cover that. If it is
17 not adequate, why, Senator Byrd can be so advised. Why don't we
18 just vote on the principle that the tax free bonds can be used
19 for this purpose, notwithstanding the fact that the sale of the
20 energy is in effect being contracted for by the Government.

21 That is what you are talking about, isn't it?

22 Mr. Shapiro. I think so. I was going to say either vote
23 on that or what I was going to suggest is I think we have a
24 general understanding of what the committee wants, what Senator
25 Byrd wants, and we can put that in a form and bring it back

1 tomorrow. I think we are agreed what the committee wants to do.
2 I was going to take a stab at writing it up tonight and --

3 Senator Bradley. Could we include the non-contiguous areas
4 as well as purchases that are not ohly made by the Federal Govern-
5 ment?

6 Mr. Shapiro. What I would like to do there is understand
7 Senator Bradley's proposal in more detail and we will bring
8 that back too, and at least show how both work.

9 Mr. Lubick. I am fearful Senator Bradley's amendment repeals
10 the existing two country rule and all the other rules that puts
11 some control on the use of the tax exempt bonds.

12 Senator Bradley. I support that very strongly.

13 Mr. Lubick. I think the effect would be a really very
14 substantial increase in the available --

15 The Chairman. Well, what have we got to worry about is the
16 cost. Now, frankly, I would like to see the Byrd proposal made
17 broad enough so that every little town in the whole United States
18 could make this garbage into energy. And if that could be done,
19 thqt would be great. I have some friends in Louisiana who would
20 like to get busy and do it. And I would be delighted to include
21 those counties in the generosity of the program. But if it is
22 going to bust the government, then I guess we will have to
23 restrain ourselves. But why don't you work up what you think you
24 can. While you are at it take a look and give us an estimate
25 of what it would cost if we let everybody do this because,

1 frankly, I would like everybody to do it, but otherwise we might
2 have to consider it on a more narrow basis if we can't afford
3 to have everybody do it.

4 Mr. Ribicoff. Mr. Chairman, I think what you are on to is
5 more than a tax policy here or a budget policy. I think what the
6 committee is facing is a very, very major policy question that
7 not only involves a question of producing energy but preventing
8 this country from being drowned in its own garbage. So you
9 really accomplishing a very important set of factors that
10 this country faces. And I think it is serious enough and worthy
11 of consideration all along, from Senator Bradley and Senator Byrd
12 and your suggestion as well. Because if you can get municipal-
13 ities to generate power and electricity and energy from their
14 garbage, you are really striking a blow in solving a lot of
15 problems.

16 I think it is worthy of very serious consideration, not only
17 that of the direct costs.

18 The Chairman. Let me suggest that we come in here at 9:30
19 tomorrow, and hopefully we can close this in a hurry and then we
20 can go on to the other things. I would like to see us make
21 most of our decisions tomorrow if we can.

22 Senator Ribicoff. May I ask Mr. Lubick, because you do have
23 a policy on the use of governmental exempt bonds, to the extent
24 that you use exempt bonds for these purposes, to that effect you
25 will be lessening the use of these tax exempt bonds for other

1 purposes because there is a limit to what the market can absorb.

2 Mr. Lubick. Well, that is correct. The problem with that
3 is because it means the State and local governments do the
4 financing --

5 Senator Ribicoff. I know, but I mean for a better purpose.

6 Mr. Lubick. Education, yes.

7 The Chairmap. We will meet tomorrow.

8 (Whereupon, at 5:15 p.m. the committee was recessed, to be
9 reconvened at 9:30 a.m. Thursday, October 18, 1979.)

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