

# Webinar

## Decarbonize NOW | Webinar 2: Explore the Details: Strategic Financing for IRA

Date: November 12, 2024

00:00:00 --> 00:00:03: And welcome to welcome to today's webinar with you Allied  
 00:00:03 --> 00:00:07: NW Decarbonized Now, the Inflation Reduction Act, Strategic  
 Financing and  
 00:00:07 --> 00:00:08: Compliance.  
 00:00:08 --> 00:00:12: This is webinar #2 in the series of three webinars  
 00:00:12 --> 00:00:13: this month.  
 00:00:13 --> 00:00:17: Today is specifically focused on exploring the details and  
 strategic  
 00:00:17 --> 00:00:20: financing for the Inflation Reduction Act.  
 00:00:21 --> 00:00:23: I think we'll give it another two minutes or so  
 00:00:23 --> 00:00:25: and then we'll get started till a lot of people  
 00:00:25 --> 00:00:26: come in.  
 00:00:27 --> 00:00:29: It's worth noting as well that this will be recorded  
 00:00:29 --> 00:00:32: and available on Uli's Knowledge Finder website after the  
 fact.  
 00:00:33 --> 00:00:36: While this is a a webinar specifically for the members  
 00:00:36 --> 00:00:39: of ULI Northwest, we expect members nationally to benefit  
 from  
 00:00:39 --> 00:00:42: this and so we have a feeling that even more  
 00:00:42 --> 00:00:45: folks will be listening the recording afterwards.  
 00:01:25 --> 00:01:27: Folks who just joined will be starting in in just  
 00:01:27 --> 00:01:29: a minute or so, just waiting for a few more  
 00:01:29 --> 00:01:32: folks to to dial in and then we'll get started.  
 00:02:03 --> 00:02:06: All right, well, I think it's about that time.  
 00:02:06 --> 00:02:07: Hello again, everyone.  
 00:02:07 --> 00:02:10: My name is Marna Schantz and I'm your moderator today.  
 00:02:10 --> 00:02:13: I'm with you all eyes headquarters in Washington, DC and  
 00:02:13 --> 00:02:16: I look forward to to helping moderate today's webinar.  
 00:02:16 --> 00:02:19: Our our plan this morning for folks in the Pacific  
 00:02:19 --> 00:02:22: Northwest is that I'll start by doing a a quick

00:02:22 --> 00:02:25: welcome and introductions, then I'll pass it to our our  
00:02:25 --> 00:02:29: featured speaker today, Professor Sadine Fall with Johns  
Hopkins University

00:02:29 --> 00:02:32: to dive into financial modelling of the Inflation Reduction Act,  
00:02:32 --> 00:02:35: tax credits and other green finance mechanisms.  
00:02:35 --> 00:02:38: From there, we'll go into a fireside chat with some  
00:02:39 --> 00:02:41: Q&A and we we are hopeful that many of you  
00:02:41 --> 00:02:44: will put put your questions into the Q and A  
00:02:44 --> 00:02:47: box so that we can work through those collectively.  
00:02:51 --> 00:02:53: For those of you who were with us for the  
00:02:53 --> 00:02:55: first webinar in the series, you will already know me,  
00:02:55 --> 00:02:56: but my name is Marta Schonz.  
00:02:56 --> 00:03:00: I'm with Uli's Randall Lewis Center for Sustainability and Real  
00:03:00 --> 00:03:03: Estate, based in our headquarters in Washington, DC We are  
00:03:03 --> 00:03:06: a Research Center that focuses on the the business case  
00:03:06 --> 00:03:11: for green buildings holistically around sustainability with  
respect to decarbonization

00:03:11 --> 00:03:13: and resilience and health and equity.  
00:03:13 --> 00:03:16: And when it comes to that business case, we're quite  
00:03:16 --> 00:03:20: hopeful that the US government's Inflation Reduction Act will  
open

00:03:20 --> 00:03:23: up some tremendous opportunities in terms of tax credits and  
00:03:23 --> 00:03:26: other financial opportunities for the real estate sector to take  
00:03:26 --> 00:03:27: advantage of.  
00:03:28 --> 00:03:31: Now joining us today for this webinar is our professor,  
00:03:32 --> 00:03:32: Sadena Fall.  
00:03:32 --> 00:03:35: He is with Johns Hopkins University's Cary Business School,  
a

00:03:35 --> 00:03:37: senior lecturer in finance.  
00:03:37 --> 00:03:41: His professional background includes leadership in real  
estate and valuation

00:03:41 --> 00:03:42: consulting and Mr.  
00:03:42 --> 00:03:43: Falls.  
00:03:45 --> 00:03:45: Mr.  
00:03:45 --> 00:03:48: Fall's work often focuses on the future of cities, including  
00:03:48 --> 00:03:51: the delivery of public infrastructure projects in both developed  
and

00:03:51 --> 00:03:52: emerging markets.  
00:03:52 --> 00:03:56: He his teaching explores issues of project financing,  
including public

00:03:56 --> 00:03:57: private partnerships.  
00:03:57 --> 00:04:02: Economic development includes investing in resilience to  
address climate related

00:04:02 --> 00:04:06: challenges and also in technology to improve new

infrastructure and  
00:04:06 --> 00:04:09: to make old infrastructure more efficient.  
00:04:10 --> 00:04:13: He I think that is plenty of a bio for  
00:04:13 --> 00:04:13: now.  
00:04:13 --> 00:04:16: And so with that, I will mute myself and pass  
00:04:16 --> 00:04:17: it to to Mr.  
00:04:17 --> 00:04:18: Paul to continue.  
00:04:21 --> 00:04:21: Thanks, Martha.  
00:04:21 --> 00:04:23: Thanks everyone for joining us.  
00:04:23 --> 00:04:27: As Martha said, I'm taking a fall with Carrier Business  
00:04:27 --> 00:04:27: School.  
00:04:28 --> 00:04:31: I would start by saying that, you know, just as  
00:04:31 --> 00:04:35: a, as an announcement, the things we're going to be  
00:04:35 --> 00:04:39: discussing today, no means should be taken as legal advice  
00:04:39 --> 00:04:43: or also most probably pertinent for today as tax advice.  
00:04:44 --> 00:04:48: IRA involves a lot of real estate friendly provisions and  
00:04:48 --> 00:04:53: that involves a deep understanding of the of the tax  
00:04:53 --> 00:04:53: code.  
00:04:53 --> 00:04:57: So my role today is to focus on modelling and  
00:04:57 --> 00:05:01: that means working in an Excel environment and see how  
00:05:01 --> 00:05:05: we can come up with a framework to show whether  
00:05:05 --> 00:05:10: some of these sections that are that's a real estate  
00:05:10 --> 00:05:14: friendly in the IRA act are accretive to the bottom  
00:05:14 --> 00:05:17: line, accretive to the cash flows.  
00:05:18 --> 00:05:22: So that's that's the public service announcement.  
00:05:22 --> 00:05:25: So we can go to the next slide and what  
00:05:25 --> 00:05:27: I'm going to do is that I will go over  
00:05:28 --> 00:05:32: just a few slides and then I'll present discounted cash  
00:05:32 --> 00:05:32: flow model.  
00:05:33 --> 00:05:37: So as far as real estate?  
00:05:37 --> 00:05:37: 'S.  
00:05:37 --> 00:05:41: From these sections of the IRAI think most people agree  
00:05:42 --> 00:05:46: that we've got 4 sections as we probably discussed this  
00:05:46 --> 00:05:50: in the previous webinar, so I won't spend too much  
00:05:50 --> 00:05:54: time here, but we've got section 179 D which is  
00:05:54 --> 00:05:58: the energy efficient commercial building deduction.  
00:05:58 --> 00:06:02: So here I am highlighting the word deduction just to,  
00:06:02 --> 00:06:05: you know, make it clear this is a deduction as  
00:06:05 --> 00:06:06: opposed to a tax credit.  
00:06:07 --> 00:06:11: So just in a nutshell, you know, you take a  
00:06:11 --> 00:06:15: building, you do energy, do a retrofit that you can  
00:06:15 --> 00:06:20: show that the building has become more energy efficient by

00:06:20 --> 00:06:21: how much.

00:06:22 --> 00:06:25: And then you know, you may be on a per

00:06:25 --> 00:06:29: square footage basis be able to have a deduction.

00:06:29 --> 00:06:33: Now at this point, it's important to maybe make a

00:06:33 --> 00:06:36: quick distinction between deductions and credits.

00:06:36 --> 00:06:41: So deductions are going to be a deduction on your

00:06:41 --> 00:06:46: taxable, your taxable income, whereas a credit would be a

00:06:46 --> 00:06:50: dollar for dollar reduction of your tax due.

00:06:51 --> 00:06:57: So generally investors prefer tax credits over tax deductions.

00:06:58 --> 00:07:03: So the second one is Section 48C qualifying advance energy

00:07:03 --> 00:07:08: project credit, but that's again it's a, it's a tax

00:07:08 --> 00:07:09: credit.

00:07:10 --> 00:07:13: The way I will illustrate it in the model is

00:07:14 --> 00:07:15: by using solar credits.

00:07:16 --> 00:07:20: There you run over the building retrofit and you install

00:07:20 --> 00:07:24: solar credits, solar panels and you will get a percentage

00:07:24 --> 00:07:26: off of the, the basis cost.

00:07:26 --> 00:07:30: So basically the cost to install those, the purchase and

00:07:30 --> 00:07:32: also install the, the solar panels.

00:07:32 --> 00:07:37: So then we've got Section 30C, which is the alternative

00:07:37 --> 00:07:41: fuel vehicle refueling property credit.

00:07:42 --> 00:07:44: Think of EV charging stations.

00:07:45 --> 00:07:49: Building that as part of a retrofit will install some

00:07:49 --> 00:07:51: EV charging stations.

00:07:51 --> 00:07:55: And here again you get a credit off of the

00:07:55 --> 00:07:58: cost of that capital improvement.

00:07:59 --> 00:08:03: And finally, we got 45 L new energy efficient home

00:08:03 --> 00:08:10: credit, which is very pertinent to residential housing, single  
family

00:08:10 --> 00:08:11: housing.

00:08:11 --> 00:08:14: This is something that I'm not going to cover, but

00:08:15 --> 00:08:17: again, the idea here is to get a framework and

00:08:17 --> 00:08:20: then you can, you know, tack on the the credits

00:08:20 --> 00:08:23: and the deductions as they are applicable.

00:08:23 --> 00:08:24: Next slide, please.

00:08:28 --> 00:08:29: So DCF?

00:08:29 --> 00:08:29: Why DCF?

00:08:31 --> 00:08:34: This EF which stands for discounted cash flow.

00:08:34 --> 00:08:37: So in real estate there are many ways you can

00:08:37 --> 00:08:38: value your property.

00:08:39 --> 00:08:43: You can use comparables method, you can use replacement  
cost

00:08:43 --> 00:08:47: method, you can use direct capitalization method.

00:08:47 --> 00:08:48: You can also use a.  
00:08:49 --> 00:08:50: Discounted cash flow method.  
00:08:50 --> 00:08:51: You know, so on and so forth.  
00:08:51 --> 00:08:57: But you know, research has shown that DCF is really  
00:08:57 --> 00:09:03: the most flexible to add ESG and sustainability type  
measures  
00:09:03 --> 00:09:04: to cash flows.  
00:09:04 --> 00:09:07: Investors care about cash flows the most.  
00:09:07 --> 00:09:11: And you know, DCF is just one that's very flexible.  
00:09:11 --> 00:09:15: So in the DCF model, we'll talk about rent premiums.  
00:09:16 --> 00:09:19: So you have a building, you're retrofitted up to a  
00:09:20 --> 00:09:24: certain standard, then the idea is that you will change  
00:09:24 --> 00:09:28: the growth rates of your income within the model.  
00:09:28 --> 00:09:31: So here, you know, the idea is that you're going  
00:09:31 --> 00:09:34: to have a tenant that's happier, tenant that's stickier, you'll  
00:09:34 --> 00:09:36: be able to charge more rent.  
00:09:36 --> 00:09:40: And in academia we tend to call that a greenium,  
00:09:40 --> 00:09:45: so rent premium due to sustainability measures.  
00:09:45 --> 00:09:47: So this is going to be an important part of  
00:09:48 --> 00:09:48: the model.  
00:09:49 --> 00:09:53: Then you know we can focus on the expenses.  
00:09:54 --> 00:10:00: So you make some energy efficient capital expenditures that  
normally  
00:10:00 --> 00:10:06: not only increases your rental growth, but we'll also be  
00:10:06 --> 00:10:08: more energy efficient.  
00:10:08 --> 00:10:13: So there we focus on expense reduction, focus on utilities  
00:10:13 --> 00:10:18: for example water usage, so on and so forth.  
00:10:18 --> 00:10:21: In DCFA, very important piece of the DCF model is  
00:10:21 --> 00:10:23: going to be a discount rate.  
00:10:24 --> 00:10:26: As the name says, you know, discounted cash flow.  
00:10:26 --> 00:10:29: We're discounting cash flows and to discount cash flows we  
00:10:29 --> 00:10:30: need the discount rate.  
00:10:31 --> 00:10:34: And the discount rate is really where the rubber meets  
00:10:34 --> 00:10:35: the road.  
00:10:35 --> 00:10:38: That's where we need to come up with a figure  
00:10:38 --> 00:10:41: that's going to be able to reflect the riskiness of  
00:10:41 --> 00:10:42: the cash flows.  
00:10:42 --> 00:10:47: But the idea with a lot of these sustainability measures  
00:10:47 --> 00:10:51: is yes, you do have some CapEx upfront, but once  
00:10:51 --> 00:10:55: you spend the CapEx, the discount rate of your cash  
00:10:55 --> 00:10:59: flows should be reduced by how much you know, that  
00:10:59 --> 00:11:04: depends on, you know, the model that you have, where

00:11:04 --> 00:11:08: you are, the type of property that you have, but  
00:11:08 --> 00:11:13: also depends on the legislative environment or mood in the  
00:11:13 --> 00:11:16: the city that your property is located in.  
00:11:16 --> 00:11:20: So just guessing point, you know, we've we've got New  
00:11:20 --> 00:11:23: York City's got a local law 97.  
00:11:23 --> 00:11:25: You know Seattle has a similar law.  
00:11:25 --> 00:11:30: You know, there's increasing legislature is looking to  
establish building  
00:11:30 --> 00:11:32: performance standards.  
00:11:32 --> 00:11:35: So if you are a owner and you haven't made  
00:11:35 --> 00:11:39: the CapEx you're building falls within you.  
00:11:40 --> 00:11:40: Know the type of?  
00:11:40 --> 00:11:42: Buildings that could be fined in the future.  
00:11:43 --> 00:11:46: So if you're today and maybe in five years you  
00:11:46 --> 00:11:50: may face, you know some issues there using DCF and  
00:11:50 --> 00:11:55: you know, adjusting your discount rate up to reflects reflect  
00:11:55 --> 00:12:00: a riskier environment is a very flexible and elegant way  
00:12:00 --> 00:12:03: to reflect cash flows that are riskier because.  
00:12:04 --> 00:12:07: You know your building is is not up to energy  
00:12:07 --> 00:12:11: performance standards that may be enacted into law in the  
00:12:11 --> 00:12:12: near future.  
00:12:13 --> 00:12:14: Then you know a lot of discussion.  
00:12:14 --> 00:12:19: Has to do with are these sustainability features equity of  
00:12:19 --> 00:12:20: the cash flow?  
00:12:20 --> 00:12:23: You know, are we in a situation where our cash  
00:12:23 --> 00:12:23: flow goes up?  
00:12:23 --> 00:12:26: And I'm showing the model that, you know, as long  
00:12:26 --> 00:12:30: as you believe the assumptions, the model is flexible enough  
00:12:30 --> 00:12:32: to show that in general, you know, you'll be in  
00:12:32 --> 00:12:35: a situation where your cash flow are going to go  
00:12:35 --> 00:12:35: up.  
00:12:35 --> 00:12:39: Now it's within assumptions, you know, in modeling, as we  
00:12:39 --> 00:12:41: say, garbage in, garbage out.  
00:12:41 --> 00:12:45: So as long as your assumptions are sound, you know  
00:12:45 --> 00:12:48: you'll be able to at least get a clear result  
00:12:48 --> 00:12:52: as far as whether you've increased your cash flows from  
00:12:52 --> 00:12:57: scenario where you've done no building performance  
sustainability measures, CapEx  
00:12:57 --> 00:13:01: to a scenario where you spent the money and your  
00:13:01 --> 00:13:04: cash flows both before tax cash flows and after tax  
00:13:04 --> 00:13:07: cash flows have have increased.  
00:13:07 --> 00:13:11: And you know, finally within the DCF, it's important to

00:13:11 --> 00:13:15: talk about payback in general in finance, we think more  
00:13:15 --> 00:13:20: in terms of internal rate of return, net present value.  
00:13:20 --> 00:13:24: But this is really a CapEx centric type of discussion  
00:13:24 --> 00:13:28: and it's important to you know, have some measures that  
00:13:28 --> 00:13:31: show you how long is it going to take to  
00:13:31 --> 00:13:33: recoup the capital investment.  
00:13:33 --> 00:13:37: That's usually where it's it's an important metric to show.  
00:13:38 --> 00:13:41: And also, as I said, you need to have a  
00:13:41 --> 00:13:46: model that's flexible enough to show you whether you'll be  
00:13:46 --> 00:13:50: able to defined in the future this idea of transition  
00:13:51 --> 00:13:55: risk, transitioning to a more decarbonized world.  
00:13:55 --> 00:13:58: Decarbonized economy may come with some fines for, you  
know,  
00:13:59 --> 00:14:02: buildings that are laggards and you need a model to  
00:14:02 --> 00:14:03: be able to show that.  
00:14:04 --> 00:14:05: Next slide, please.  
00:14:09 --> 00:14:13: So in the beginning I talked a little bit about  
00:14:13 --> 00:14:17: the difference between deductions and tax credits.  
00:14:17 --> 00:14:19: Or again, deductions would lower your  
00:14:20 --> 00:14:25: Taxable income, whereas tax credits would lower your tax  
due  
00:14:25 --> 00:14:28: as long as you're eligible for them.  
00:14:29 --> 00:14:30: So the solar.  
00:14:30 --> 00:14:34: Investment tax credit has been enacted, has been continued  
by  
00:14:34 --> 00:14:37: the IRA, but the idea here is to be very  
00:14:37 --> 00:14:38: careful.  
00:14:38 --> 00:14:42: When you're modeling tax credits, you know, once you have  
00:14:42 --> 00:14:46: a framework where you can reduce your tax due is  
00:14:46 --> 00:14:50: one thing, but you're going to have some recapture.  
00:14:50 --> 00:14:53: So here I have just a simplified example.  
00:14:54 --> 00:14:57: Let's say you purchase a building for \$10 million.  
00:14:57 --> 00:15:03: Let's say you spend 2,000,000 on solar equipment and  
insulation.  
00:15:03 --> 00:15:06: Again, these numbers are just for illustrative purposes.  
00:15:07 --> 00:15:11: Your tax credit, let's say you Max at 30%, which  
00:15:11 --> 00:15:15: is the maximum you can get currently with the IRA.  
00:15:15 --> 00:15:19: So that means that you have \$600,000 in tax credits,  
00:15:19 --> 00:15:21: so 2,000,000 times the 30%.  
00:15:21 --> 00:15:25: And that tax credit will lower the amount of money  
00:15:25 --> 00:15:28: you have to spend, which here is \$2,000,000.  
00:15:28 --> 00:15:29: So it's going to lower.  
00:15:29 --> 00:15:33: It dollar for dollar, however, next slide please, you're going

00:15:33 --> 00:15:36: to have what's called recapture, so here.

00:15:37 --> 00:15:39: We call it reduction in basis.

00:15:39 --> 00:15:43: So what's going to happen is that, you know, let's

00:15:43 --> 00:15:48: say your original basis was 9.8 million, this \$600,000 is

00:15:48 --> 00:15:51: going to reduce your basis now to 9.2.

00:15:51 --> 00:15:53: Just for illustrative purposes.

00:15:53 --> 00:15:55: The point is here is that you may be in

00:15:55 --> 00:15:59: a situation where you're going to lose some depreciation and

00:15:59 --> 00:16:01: this is something that in the model I'll show you,

00:16:01 --> 00:16:04: you know, you'd have to, you know, you'd have to

00:16:04 --> 00:16:05: adjust for.

00:16:05 --> 00:16:06: Next slide, please.

00:16:08 --> 00:16:14: So another aspect of the IRA is financing.

00:16:14 --> 00:16:18: So you've got the deductions, you've got the tax credits,

00:16:18 --> 00:16:21: but you also have, you know, the whole slew of

00:16:21 --> 00:16:23: green financing measures.

00:16:23 --> 00:16:26: So I use C Pace as as an example in

00:16:27 --> 00:16:29: the DCF that I will show you.

00:16:29 --> 00:16:30: The C pace.

00:16:30 --> 00:16:34: Stands for Commercial Property Assessed Clean Energy.

00:16:34 --> 00:16:39: So it's flexible, it's a flexible form of financing which

00:16:39 --> 00:16:43: offers borrowers a low cost, long term fixed rate.

00:16:43 --> 00:16:46: So you know it's a busy slide and has a

00:16:46 --> 00:16:48: lot of words, but what you need to remember here

00:16:48 --> 00:16:51: or what to retain if you're unfamiliar with with C?

00:16:51 --> 00:16:52: Pays.

00:16:52 --> 00:16:56: It's just that you've got this property tax assessment that's

00:16:56 --> 00:16:59: going to be interesting to to look at from a

00:17:00 --> 00:17:01: modeling standpoint.

00:17:01 --> 00:17:04: So that would make more sense once we jump into

00:17:04 --> 00:17:07: Excel to show you how I modelled it.

00:17:08 --> 00:17:09: So next slide please.

00:17:12 --> 00:17:16: So again, just for illustrated purposes, one of the things

00:17:16 --> 00:17:18: I'll I'll, I'll show is let's say we do a

00:17:18 --> 00:17:19: retrofit.

00:17:19 --> 00:17:23: The retrofit is for let's say 31 million and change.

00:17:24 --> 00:17:26: We're going to have one scenario.

00:17:26 --> 00:17:30: Where we can just finance it traditionally without any of

00:17:30 --> 00:17:33: the sustainability financing measures.

00:17:33 --> 00:17:36: So we'll put up, let's say 20% equity and then

00:17:36 --> 00:17:37: we'll get some.

00:17:37 --> 00:17:40: Sort of a loan at 80% next slide and then



00:17:40 --> 00:17:45: a more, you know, Cassie based type of vehicle where  
00:17:45 --> 00:17:49: again here we're going to have two loans, you know  
00:17:49 --> 00:17:53: what I call a senior loan, a more traditional loan  
00:17:53 --> 00:17:56: and then the C base on top of it.  
00:17:56 --> 00:18:00: And the idea is to see whether doing the traditional  
00:18:00 --> 00:18:04: financing thing or doing the C base.  
00:18:04 --> 00:18:05: Is it accretive?  
00:18:05 --> 00:18:08: You know, does it change the bottom line of my  
00:18:08 --> 00:18:08: cash flows?  
00:18:08 --> 00:18:10: And you know, we'll be able to see that in  
00:18:10 --> 00:18:10: in Excel.  
00:18:11 --> 00:18:12: Next slide please.  
00:18:14 --> 00:18:18: So just to finish off here, before we jump into  
00:18:18 --> 00:18:22: Excel, you know, adding CapEx below the line is something  
00:18:23 --> 00:18:25: that's important in ADCF standpoint.  
00:18:26 --> 00:18:29: So you know, you're in a situation where you're thinking  
00:18:29 --> 00:18:30: of doing a retrofit.  
00:18:31 --> 00:18:33: You've heard about, you know, a lot of tax credits  
00:18:33 --> 00:18:34: that you may be eligible for.  
00:18:35 --> 00:18:39: But the money that you're going to spend upfront, you  
00:18:39 --> 00:18:43: know, generally may not be part of operation.  
00:18:43 --> 00:18:44: So you would have to do.  
00:18:44 --> 00:18:47: You'd have to add it below the line, meaning below  
00:18:47 --> 00:18:50: NOI because it's not something that's recurring, right?  
00:18:50 --> 00:18:52: It's not something that's really part of our operations.  
00:18:52 --> 00:18:55: So there may be some, you know, discussions here and  
00:18:55 --> 00:18:58: there, but generally speaking we want to add it in  
00:18:58 --> 00:19:01: the CapEx line below operations, but above, above cash  
flows  
00:19:01 --> 00:19:03: to show that it's going to really.  
00:19:04 --> 00:19:06: Be a deduction off of your cash flows and hopefully.  
00:19:07 --> 00:19:08: You know you can recoup.  
00:19:10 --> 00:19:13: Some of that money by increasing your rents, by having  
00:19:13 --> 00:19:17: a stickier tenant, by having lower expenses, so on and  
00:19:17 --> 00:19:18: so forth.  
00:19:19 --> 00:19:22: Then we've got, you know, as far as green financing  
00:19:22 --> 00:19:27: is concerned, most of the time advantageous interest rates,  
right?  
00:19:27 --> 00:19:31: So interest rates that are either subsidized or you know,  
00:19:31 --> 00:19:35: interest rates that are lower than normal just entice you  
00:19:35 --> 00:19:38: to make some of these adjustments.  
00:19:38 --> 00:19:42: And also as I spoke about earlier, the discount rate  
00:19:42 --> 00:19:43: in ADCF.

00:19:43 --> 00:19:45: Environment, the discount rate is is is very key.

00:19:46 --> 00:19:49: So let me now jump into the model Martha.

00:19:49 --> 00:19:50: I'm going to share my screen.

00:19:55 --> 00:19:55: Terrific.

00:19:57 --> 00:20:01: I think that was that was some really helpful stage

00:20:01 --> 00:20:04: setting to to get us started as we think about

00:20:04 --> 00:20:09: all those different inputs and considerations for discounted cash flow

00:20:10 --> 00:20:12: credits versus deductions and beyond.

00:20:12 --> 00:20:16: So looking forward to having you dive into the spreadsheet.

00:20:16 --> 00:20:17: Fantastic.

00:20:18 --> 00:20:18: Thanks.

00:20:19 --> 00:20:22: So it's busy as, as Martha mentioned, we have a

00:20:22 --> 00:20:23: lot of inputs.

00:20:24 --> 00:20:26: So anything I think blue is an input.

00:20:26 --> 00:20:29: So I'm going to just walk through this somewhat quickly

00:20:29 --> 00:20:31: to have more time for discussion.

00:20:31 --> 00:20:35: But on this sheet, I've got what's called a baseline

00:20:36 --> 00:20:36: building.

00:20:36 --> 00:20:39: So baseline building is, is a term of art as

00:20:39 --> 00:20:42: far as IRA is concerned, the building that would be

00:20:43 --> 00:20:46: eligible for some of the tax credits and tax deductions.

00:20:46 --> 00:20:49: So let's say it's an office building in New York

00:20:49 --> 00:20:49: City.

00:20:49 --> 00:20:54: It's an old building, hasn't been renovated for a long

00:20:54 --> 00:20:54: time.

00:20:54 --> 00:20:57: I picked a big building, just, you know, to make

00:20:57 --> 00:20:59: sure that we can take advantage of a lot of

00:20:59 --> 00:21:02: the provisions of the building is not too small.

00:21:03 --> 00:21:05: I've got some revenue drivers here.

00:21:06 --> 00:21:07: Rate of occupancy.

00:21:08 --> 00:21:09: I've got the average rent.

00:21:10 --> 00:21:13: I've got, you know, pretty anemic rental growth.

00:21:15 --> 00:21:18: I've got the market rent when you expire or when

00:21:18 --> 00:21:20: the leases expire.

00:21:20 --> 00:21:24: I've got reimbursable expenses and I've got an expense stop.

00:21:24 --> 00:21:28: So, you know, for those of you we're not familiar

00:21:28 --> 00:21:32: with office buildings, this would be a modified gross lease

00:21:32 --> 00:21:35: where the landlord is going to be responsible for some

00:21:35 --> 00:21:38: of the expenses, but up to a stop.

00:21:38 --> 00:21:41: Anything above the stop, you're going to have to reimburse

00:21:41 --> 00:21:43: the landlord you, meaning the tenant.

00:21:43 --> 00:21:45: Then I've got some expense drivers here.  
00:21:45 --> 00:21:47: You know, CapEx is a big one.  
00:21:47 --> 00:21:50: You know, it's an old building, I've got some, you  
00:21:50 --> 00:21:54: know, expense growth numbers, I've got a probability of renewal.  
00:21:55 --> 00:21:58: So again, the idea of a sticky tenant, you know,  
00:21:58 --> 00:22:01: you can capture a lot of that information with a  
00:22:01 --> 00:22:02: probability of renewal.  
00:22:02 --> 00:22:05: If you have a lot of leases that are about  
00:22:05 --> 00:22:07: to expire, you know, you want to be in a  
00:22:07 --> 00:22:11: situation where you're probably your renewal is higher than not  
00:22:11 --> 00:22:15: because you've made a lot of the sustainability measures.  
00:22:15 --> 00:22:19: Now that's also a very important aspect because you know,  
00:22:19 --> 00:22:22: finding a new tenant is is expensive in terms of  
00:22:22 --> 00:22:26: tenant improvements, in terms of commissions to pay, so on  
00:22:26 --> 00:22:27: and so forth.  
00:22:28 --> 00:22:32: So here again, just illustrative paper purposes, we've got some  
00:22:32 --> 00:22:35: leases that are expiring, you know, so on and so  
00:22:35 --> 00:22:35: forth.  
00:22:35 --> 00:22:40: Then we've got some past appraisal, we've got some  
00:22:40 --> 00:22:44: valuation  
00:22:44 --> 00:22:44: metrics here, cap rates, discount rate, I mentioned discount  
00:22:44 --> 00:22:48: rate,  
00:22:44 --> 00:22:48: which is really crucial for DCF because this is where  
00:22:48 --> 00:22:50: we'll capture the risk.  
00:22:50 --> 00:22:53: And then we've got a 10 year projection window.  
00:22:53 --> 00:22:56: So if we, you know, work everything in Excel, we're  
00:22:56 --> 00:22:58: going to do a 10 year projection window.  
00:23:00 --> 00:23:03: Then we've got our you know gross rent, they got  
00:23:03 --> 00:23:07: the vacancy, add some expense reimbursement from the  
00:23:07 --> 00:23:09: expense stop,  
00:23:07 --> 00:23:09: we've got our total revenue.  
00:23:09 --> 00:23:12: So again the expense reimbursement is the revenue for the  
00:23:12 --> 00:23:13: for the landlord.  
00:23:14 --> 00:23:17: Then I deduct my expenses all based on my assumptions.  
00:23:17 --> 00:23:20: I got my NOI CapEx, when I said below the  
00:23:20 --> 00:23:24: line, below NOI and a lot of the sustainability measures  
00:23:24 --> 00:23:28: you're going to have to the upfront money that you  
00:23:28 --> 00:23:32: have to spend, it would be reasonable to add them  
00:23:32 --> 00:23:37: to CapEx more so than to your regular operating expenses.  
00:23:37 --> 00:23:41: So below the line then we do a reversion as

00:23:41 --> 00:23:42: ADCF.

00:23:42 --> 00:23:43: So we hold for 10 years.

00:23:44 --> 00:23:49: We use your Elevens NOI, use an exit cap rate.

00:23:49 --> 00:23:53: So we would be selling this building for about 271,

00:23:53 --> 00:23:56: two, \$170 million in year 10.

00:23:56 --> 00:23:58: And then we'll bring it back here, add the cash

00:23:58 --> 00:24:01: flow for your TAN and this is going to be

00:24:01 --> 00:24:02: our reversion cash flow.

00:24:02 --> 00:24:07: So when we add everything, we've got about \$210 million

00:24:07 --> 00:24:12: as a discounted DCF valuation for the building.

00:24:12 --> 00:24:15: So, so far, no sustainability measures.

00:24:15 --> 00:24:19: We've got here a sensitivity analysis just to show that

00:24:19 --> 00:24:23: the value is very sensitive to assumptions such as cap

00:24:23 --> 00:24:26: rate and also how sticky your tenant is, which is

00:24:26 --> 00:24:29: captured by the renewal probability.

00:24:29 --> 00:24:34: Then we do another sensitivity analysis showing the value is

00:24:34 --> 00:24:37: also very sensitive to month of vacancy.

00:24:37 --> 00:24:41: So a lot of tenancy type of assumptions and also

00:24:41 --> 00:24:44: your discount rate of course, right.

00:24:44 --> 00:24:46: So that's going to be that's going to be very

00:24:46 --> 00:24:46: important.

00:24:46 --> 00:24:50: So here as I change my discount rate, as I

00:24:50 --> 00:24:52: change my assumed.

00:24:52 --> 00:24:53: Number of months.

00:24:53 --> 00:24:55: That I'm going to be vacant, you know, the value

00:24:55 --> 00:24:56: is, is going to change.

00:24:56 --> 00:24:59: And of course as you can see here as the

00:24:59 --> 00:25:02: discount rate goes up, the value goes down in the

00:25:02 --> 00:25:04: baseline or I would say base case we've got a

00:25:04 --> 00:25:05: 7% discount rate.

00:25:06 --> 00:25:10: We've got 10 years on average, 10 months rather on

00:25:10 --> 00:25:14: average of of a vacancy and we have a value

00:25:14 --> 00:25:16: of 210 and 210 million.

00:25:16 --> 00:25:19: But as you can see, as the discount rate goes

00:25:19 --> 00:25:22: up, you know our value given the various scenarios is

00:25:22 --> 00:25:23: going to go down.

00:25:24 --> 00:25:26: Now let's talk about IRA.

00:25:26 --> 00:25:30: So let's say we take that information that we had

00:25:30 --> 00:25:32: in the previous sheet.

00:25:32 --> 00:25:36: We decide to spend \$49 a square foot of this

00:25:36 --> 00:25:41: big building that's over 600,000 square feet, turns out to

00:25:41 --> 00:25:45: be 31 million and change and we want to make

00:25:45 --> 00:25:47: some sustainability measures.

00:25:47 --> 00:25:50: So first we have to think about the revenue drivers.

00:25:50 --> 00:25:54: So here in our assumption, operating expense savings at 20%

00:25:54 --> 00:25:59: on average compared to the previous scenario where we didn't

00:25:59 --> 00:26:03: do anything, then we increase the stickiness of our tenants.

00:26:03 --> 00:26:08: So we're going to have a 95% occupancy, then our

00:26:08 --> 00:26:12: rental growth is going to go from 3% to to

00:26:12 --> 00:26:12: 6%.

00:26:12 --> 00:26:15: So we make a lot of the revenue assumptions.

00:26:16 --> 00:26:18: Then we assume it's an office building.

00:26:18 --> 00:26:22: So the depreciation I'm just using straight line 39 years.

00:26:22 --> 00:26:26: But again, you check with your tax folks.

00:26:26 --> 00:26:29: But the idea here is these are inputs, so you

00:26:29 --> 00:26:31: can change the inputs and see how the numbers change

00:26:31 --> 00:26:33: the depreciation amount.

00:26:33 --> 00:26:36: This is just the a month that you spend.

00:26:36 --> 00:26:39: Let's say we do a straight line depreciation every year,

00:26:39 --> 00:26:42: we could deduct this much financing assumptions.

00:26:42 --> 00:26:46: So the retrofit we decide 80% finance by let's say

00:26:46 --> 00:26:47: a regular loan.

00:26:48 --> 00:26:51: So that's going to be \$25 million in change that

00:26:51 --> 00:26:54: we'll have to spend as CapEx.

00:26:54 --> 00:26:57: The loan is going to be amortized over 20 years.

00:26:58 --> 00:27:03: Our equity contribution is the 20 percent 6,000,000 interest rate.

00:27:03 --> 00:27:08: You know, we use just for illustrative purposes, 7.83%.

00:27:08 --> 00:27:10: This is our debt service.

00:27:10 --> 00:27:14: And then the lender wants a debt service coverage ratio

00:27:14 --> 00:27:15: of 1.25.

00:27:15 --> 00:27:20: So now let's go into one of the measures here.

00:27:20 --> 00:27:21: So let me make this a little bigger.

00:27:22 --> 00:27:25: One of the measures would be 179 D, So this

00:27:25 --> 00:27:29: office building could be eligible for 179 D So we

00:27:29 --> 00:27:32: decided to make a lot of energy improvements.

00:27:32 --> 00:27:34: Then we Max out.

00:27:34 --> 00:27:38: So the maximum you can get, you know, the maximum

00:27:38 --> 00:27:41: bonus including all the bonuses is going to be \$2.00

00:27:41 --> 00:27:43: a square foot, \$2.50 a square foot.

00:27:44 --> 00:27:46: All right, so let's say we Max out \$2.50 a

00:27:46 --> 00:27:47: square foot.

00:27:48 --> 00:27:50: And again 1790 is a deduction.

00:27:51 --> 00:27:56: So we do some improvements to lighting systems, HVAC, the  
00:27:56 --> 00:27:58: building envelope.  
00:27:59 --> 00:28:02: We were able to reduce cost by more than energy  
00:28:02 --> 00:28:04: cost by more than 50%.  
00:28:04 --> 00:28:08: We also applied a lot of the wage and apprenticeship  
00:28:08 --> 00:28:09: requirements.  
00:28:09 --> 00:28:13: So all of these we get a check green mark.  
00:28:13 --> 00:28:17: We are able to get \$2.50 in terms of deduction,  
00:28:17 --> 00:28:19: right, not a tax credit.  
00:28:20 --> 00:28:24: So that \$2.50, let's say I go here, you know  
00:28:25 --> 00:28:30: completely Max out times the size of the building, the  
00:28:30 --> 00:28:36: building we said was the 600 and change 637, right?  
00:28:36 --> 00:28:41: If I click here, going to end up being 1,594,000.  
00:28:41 --> 00:28:44: So this is going to be a deduction, a deduction  
00:28:44 --> 00:28:45: off of your taxable income.  
00:28:46 --> 00:28:48: So that begs the question, what is the taxable income  
00:28:48 --> 00:28:49: in a scenario like this?  
00:28:49 --> 00:28:53: So in a scenario like this, right, So we've grown  
00:28:53 --> 00:28:57: our expenses, we've grown our revenue, we've reduced our  
expenses  
00:28:57 --> 00:29:01: and we have a nice debt service coverage ratio set  
00:29:01 --> 00:29:02: up here.  
00:29:02 --> 00:29:05: Then we got to go into the tax calculation.  
00:29:05 --> 00:29:09: So I take my Nii, deduct the interest portion, and  
00:29:09 --> 00:29:15: so NI deduct the interest portion, I deduct the depreciation,  
00:29:15 --> 00:29:20: then I've got my taxable income, then this is going  
00:29:20 --> 00:29:22: to be my income tax payable.  
00:29:22 --> 00:29:26: So let's say here we take the taxable income, we  
00:29:26 --> 00:29:28: tack on income tax payable.  
00:29:28 --> 00:29:28: I mean a tax rate.  
00:29:29 --> 00:29:30: You're going to get your income tax payable.  
00:29:31 --> 00:29:35: And from here you take your NLI, deduct the whole  
00:29:35 --> 00:29:41: debt service, deduct the tax, right, that you calculated, then  
00:29:41 --> 00:29:45: you're going to end up with a after tax cash  
00:29:45 --> 00:29:46: flow.  
00:29:46 --> 00:29:49: So before tax cash flow, we take the NOI, we  
00:29:49 --> 00:29:53: deduct every debt service and after tax cash flow, we  
00:29:53 --> 00:29:56: deduct the tax that we calculated here.  
00:29:56 --> 00:30:01: So this provision, right, the 179 D is going to  
00:30:01 --> 00:30:04: be just an addition here.  
00:30:05 --> 00:30:07: So here we said taxable income.  
00:30:07 --> 00:30:10: Well, this is going to reduce my taxable income.

00:30:10 --> 00:30:14: So if I go here, let's say I capture everything  
00:30:14 --> 00:30:18: in the year 1, I go here, I'm just going  
00:30:18 --> 00:30:22: to pick up this much to reduce my taxable income.  
00:30:23 --> 00:30:26: So if I press enter, well, you can see that  
00:30:26 --> 00:30:28: my after tax cash flow has gone up, right?  
00:30:28 --> 00:30:29: So let me just do that again.  
00:30:30 --> 00:30:34: You know, assuming that all of the, you know, inputs,  
00:30:34 --> 00:30:38: we agree on all of the inputs, year one, my  
00:30:38 --> 00:30:42: tax and my after tax cash flow was 5.5715 million  
00:30:42 --> 00:30:44: 507 one and change.  
00:30:44 --> 00:30:50: But here, you know, I'm going to do, I'm going  
00:30:50 --> 00:30:53: to capture my 179 deduction.  
00:30:54 --> 00:30:56: So to do that, I'm just going to be here.  
00:30:56 --> 00:31:03: All right here I'm going to highlight this 5.7.  
00:31:03 --> 00:31:09: Then taxable income is going to go down, going to  
00:31:09 --> 00:31:16: go down by the maximum deduction that I'm allowed, which  
00:31:16 --> 00:31:18: is 1.5 in change.  
00:31:18 --> 00:31:21: And you can see that my after tax cash flow  
00:31:21 --> 00:31:23: is going to go up.  
00:31:23 --> 00:31:24: And this is when investors care about the after tax  
00:31:25 --> 00:31:25: cash flow.  
00:31:25 --> 00:31:28: So from here if you want to calculate your IRR  
00:31:28 --> 00:31:31: internal rate of return, you want to calculate NPV.  
00:31:31 --> 00:31:34: The point is, in this scenario as set up, it  
00:31:34 --> 00:31:35: is acquitted.  
00:31:36 --> 00:31:40: You know to cash flows, meaning it's going to increase  
00:31:40 --> 00:31:41: your cash flows, so.  
00:31:42 --> 00:31:43: Let's talk about the solar.  
00:31:44 --> 00:31:47: I talked a little bit about depreciation recapture.  
00:31:47 --> 00:31:51: So in solar, again, I'll spare you a lot of  
00:31:51 --> 00:31:55: the details as to how you maximize the bonus, but  
00:31:55 --> 00:31:58: I'll tell you Max out at 30% tax credit instead  
00:31:58 --> 00:32:00: of a tax deduction.  
00:32:00 --> 00:32:04: So when we're there for solar, let's say we install  
00:32:04 --> 00:32:09: \$2,000,000 worth of solar panels, then the tax credit is  
00:32:09 --> 00:32:13: going to be the \$2,000,000 times the 30%, it's going  
00:32:13 --> 00:32:14: to be \$600,000.  
00:32:14 --> 00:32:16: Then let's say we have a basis reduction.  
00:32:16 --> 00:32:19: I spoke about it a little when I went through  
00:32:19 --> 00:32:20: the PowerPoint.  
00:32:20 --> 00:32:23: Let's say here for argument's sake, we have a basis  
00:32:24 --> 00:32:25: reduction of 50%.

00:32:26 --> 00:32:31: So that means that 50% times, you know, tax rate  
00:32:31 --> 00:32:35: at 21% is going to be, we're going to end  
00:32:35 --> 00:32:40: up with 63,000 as a basis reduction, right.  
00:32:40 --> 00:32:44: Then what we need to know is that this \$600,000  
00:32:44 --> 00:32:48: credit has been reduced to a net benefit of 537  
00:32:48 --> 00:32:51: because of the basis reduction.  
00:32:51 --> 00:32:56: Now how do we how is it different from 179  
00:32:56 --> 00:32:56: D?  
00:32:56 --> 00:33:00: Well, here what's going to happen is that this 537  
00:33:00 --> 00:33:04: is not a deduction off of taxable income.  
00:33:04 --> 00:33:06: What this is going to do, it is going to  
00:33:06 --> 00:33:11: reduce the cost of the project, particularly this equity  
contribution,  
00:33:11 --> 00:33:14: the amount of money that you and your investors have  
00:33:15 --> 00:33:17: to put in is going to have to go down  
00:33:17 --> 00:33:18: from here, All right.  
00:33:19 --> 00:33:22: This includes the whole project, everything you're doing in  
terms  
00:33:22 --> 00:33:24: of energy efficiency, so on and so forth.  
00:33:24 --> 00:33:28: This is going to be reduced by let's say the  
00:33:28 --> 00:33:32: maximum benefit that you would receive for.  
00:33:33 --> 00:33:36: So instead of having to come up with \$6.3 million,  
00:33:36 --> 00:33:39: you need to come up with \$5.8 million in this  
00:33:39 --> 00:33:41: kind of a stylized example.  
00:33:41 --> 00:33:45: So the bottom line here is that as an investor,  
00:33:45 --> 00:33:49: you know, if your cash flows increase in such a  
00:33:49 --> 00:33:53: manner and you have to put in less money upfront  
00:33:53 --> 00:33:57: because of the tax credit, even with the reduction in  
00:33:57 --> 00:34:01: basis, you lost a little bit from 600,000 to 537.  
00:34:01 --> 00:34:03: This is still going to be equity of the cash  
00:34:03 --> 00:34:05: flow, your return on equity, right?  
00:34:05 --> 00:34:08: The return on the money that you actually put in  
00:34:08 --> 00:34:10: is going to be higher because you put in less  
00:34:10 --> 00:34:11: money, right?  
00:34:11 --> 00:34:14: Assuming that again, I'm jumping over the fact that, you  
00:34:14 --> 00:34:17: know, you have to read the fine print and make  
00:34:17 --> 00:34:20: sure that you can get the the Max bonus, but  
00:34:20 --> 00:34:23: you can see that these things can, you know, tack  
00:34:23 --> 00:34:25: on one on top of the other, right?  
00:34:25 --> 00:34:28: So 179, then the 48C, you know, just in a  
00:34:28 --> 00:34:31: small recap, you can be in a situation where you  
00:34:31 --> 00:34:34: have a deduction off of your taxable income, say in  
00:34:34 --> 00:34:38: the first year or the second year, you know, whenever



00:34:38 --> 00:34:40: you're you're able to capture that.

00:34:40 --> 00:34:44: And then the amount of equity that you put the

00:34:44 --> 00:34:48: project cost is going to go down because of the

00:34:48 --> 00:34:52: tax credit despite the recapture that you lost.

00:34:53 --> 00:34:56: But now I'm going to switch a little bit to

00:34:56 --> 00:34:57: financing.

00:34:57 --> 00:35:01: So I wanted to illustrate C base which is allowed

00:35:01 --> 00:35:03: under under the IRA.

00:35:03 --> 00:35:07: So C base, let's say we have the same situation,

00:35:07 --> 00:35:12: you know, we're looking to spend roughly 31 million, 782

00:35:12 --> 00:35:16: on improvements that are C base allowed.

00:35:16 --> 00:35:21: Then we have the same situation tax savings, occupancy

00:35:21 --> 00:35:25: that's higher rental growth that's higher here C base.

00:35:26 --> 00:35:29: It's one of the important things with C pace is

00:35:29 --> 00:35:32: that we we were going to have accelerated depreciation.

00:35:33 --> 00:35:37: So your depreciation years are going to go down, meaning

00:35:37 --> 00:35:41: you're going to have more depreciation, which is going to

00:35:41 --> 00:35:43: be good for your after tax cash flows.

00:35:43 --> 00:35:46: More depreciation means you have to pay less taxes.

00:35:46 --> 00:35:49: So if this is, if the improvements are C pace

00:35:49 --> 00:35:52: eligible in your model, you know, you speak to your

00:35:52 --> 00:35:57: accountant, but whether it's 15 years, eight years, the point

00:35:57 --> 00:36:01: is you're going to have accelerated depreciation then you know

00:36:01 --> 00:36:04: the depreciation is not going to be for all of

00:36:04 --> 00:36:05: the building.

00:36:05 --> 00:36:08: It's going to be for the portion of the building

00:36:08 --> 00:36:10: that is C pace eligible.

00:36:10 --> 00:36:13: So we have here 35% as as an assumption that

00:36:13 --> 00:36:17: 35% of the building is going to be C pace

00:36:17 --> 00:36:17: eligible.

00:36:18 --> 00:36:21: Then we're going to have two different types of depreciation.

00:36:21 --> 00:36:25: 1 is a traditional depreciation, which is 65% of the

00:36:25 --> 00:36:31: building and then the accelerated depreciation which is

00:36:31 --> 00:36:35: higher 35%

00:36:31 --> 00:36:35: of the building which is what is C pays eligible

00:36:35 --> 00:36:36: or compliant.

00:36:36 --> 00:36:40: Then we have a tax rate for the investor, right.

00:36:42 --> 00:36:48: We're going to have loan to cost here at 20%

00:36:48 --> 00:36:49: for C base.

00:36:50 --> 00:36:52: It's going to give us 2 loans.

00:36:53 --> 00:36:57: One loan is going to be 19,000,000, the other one

00:36:57 --> 00:37:00: is going to be 6,000,000 and change.

00:37:01 --> 00:37:03: And then your total equity contribution is going to be

00:37:03 --> 00:37:04: this much.

00:37:04 --> 00:37:07: We're going to have two interest rates, right, The interest

00:37:07 --> 00:37:10: rates for the traditional loan and then the interest rate

00:37:10 --> 00:37:12: for the C based loan.

00:37:12 --> 00:37:15: We're going to use a 20 year amortization.

00:37:15 --> 00:37:17: And then we're going to have two different debt services.

00:37:18 --> 00:37:22: So just to, you know, show the amortization table.

00:37:22 --> 00:37:28: So this is your classic amortization table over 20 years,

00:37:28 --> 00:37:33: you can see that it's going to amortize all the

00:37:33 --> 00:37:38: way down to 0 after 240, after 240 periods, right?

00:37:38 --> 00:37:42: Then you're going to have the C pace amortization and

00:37:42 --> 00:37:46: the C pays, sorry, the C pays debt schedule and

00:37:46 --> 00:37:48: C pays doesn't amortize.

00:37:48 --> 00:37:51: So there's going to be an interest only loan and

00:37:51 --> 00:37:53: you know we can show it here, right?

00:37:53 --> 00:37:54: It doesn't amortize.

00:37:54 --> 00:37:57: You're just going to pay interest and you still owe

00:37:57 --> 00:37:59: the amount at the end.

00:37:59 --> 00:38:00: So this is not going to amortize.

00:38:00 --> 00:38:03: So for simplicity we said that we're going to hold

00:38:03 --> 00:38:06: this for four years, but how does it affect the

00:38:06 --> 00:38:07: cash flow?

00:38:07 --> 00:38:08: So we'll see here.

00:38:08 --> 00:38:13: Now we've got our potential growth income that service, but

00:38:14 --> 00:38:18: here's where C pays is really going to be important

00:38:18 --> 00:38:20: is the real estate taxes.

00:38:21 --> 00:38:25: So the amount of interest that you're paying on the

00:38:25 --> 00:38:26: loan, which is 751.

00:38:27 --> 00:38:30: So this amount of interest, right, this is an interest

00:38:30 --> 00:38:30: only loan.

00:38:31 --> 00:38:35: This amount of interest is going to be right here

00:38:35 --> 00:38:39: deducted as part of your tax assessment, right?

00:38:39 --> 00:38:40: So that's C pays.

00:38:40 --> 00:38:44: So from a modeling standpoint, the interest that you're

00:38:44 --> 00:38:46: paying

00:38:44 --> 00:38:46: on the loan is going to be part of your

00:38:46 --> 00:38:47: property taxes.

00:38:47 --> 00:38:49: So that's what we modeled here.

00:38:49 --> 00:38:51: It's going to be part of your property taxes.

00:38:51 --> 00:38:51: All right?

00:38:52 --> 00:38:55: And then since this is going to be part of

00:38:55 --> 00:39:00: operating expenses by property taxes, it's going to lower your

00:39:00 --> 00:39:02: net operating income.

00:39:02 --> 00:39:06: It's going to lower your net operating income because here

00:39:06 --> 00:39:08: you have an extra line which is the C pace

00:39:08 --> 00:39:09: assessment.

00:39:09 --> 00:39:12: You know the the interest you're paying on C pace

00:39:12 --> 00:39:14: is going to be part of your property taxes.

00:39:14 --> 00:39:17: So when we do that, we do our regular tax

00:39:18 --> 00:39:22: calculation, NOI minus interest minus depreciation.

00:39:23 --> 00:39:28: So the first regular depreciation and then the accelerated

00:39:28 --> 00:39:30: depreciation.

00:39:28 --> 00:39:30: So you have more depreciation.

00:39:30 --> 00:39:32: Then what's going to happen is you're going to have

00:39:33 --> 00:39:35: a taxable income and then you have income tax payable.

00:39:35 --> 00:39:39: So you can see here that if you compare income

00:39:39 --> 00:39:44: tax payable here 2 million and change without C base,

00:39:44 --> 00:39:48: you can see that here with C base, right, you're

00:39:48 --> 00:39:53: going to have more deductions and your taxable income is

00:39:53 --> 00:39:55: going to be effective.

00:39:55 --> 00:40:00: So then bottom line is that we're going to be

00:40:00 --> 00:40:05: here, our after tax cash flows are going to be

00:40:05 --> 00:40:07: higher right then.

00:40:07 --> 00:40:10: If we were here without the.

00:40:11 --> 00:40:12: So here we added the.

00:40:12 --> 00:40:16: We added the bonus from.

00:40:16 --> 00:40:21: If we take out this bonus, this is what we

00:40:22 --> 00:40:23: have, right?

00:40:24 --> 00:40:31: It ranges from 5.5 to 6.3, whereas with C base

00:40:31 --> 00:40:34: it ranges from 5.7 to 6.5.

00:40:36 --> 00:40:40: A slightly better scenario when you when you have C

00:40:40 --> 00:40:40: base.

00:40:40 --> 00:40:43: Reason being is that you're going to end up paying.

00:40:43 --> 00:40:45: A lot less taxes.

00:40:45 --> 00:40:46: Due to two reasons.

00:40:46 --> 00:40:48: One, your NOI is lower.

00:40:49 --> 00:40:50: Why is your NOI lower?

00:40:50 --> 00:40:56: Because the tax assessment, the interest you're paying now

00:40:56 --> 00:41:01: is

00:40:56 --> 00:41:01: included in your property taxes and also you're in a

00:41:01 --> 00:41:06: situation where you're going to be having an extra line

00:41:07 --> 00:41:10: of depreciation, which is faster.

00:41:10 --> 00:41:13: So net, net after tax cash flow is going to  
00:41:13 --> 00:41:14: be higher.  
00:41:14 --> 00:41:18: If after tax cash flow is higher, obviously the investor  
00:41:18 --> 00:41:20: is going to be, is going to be happy with  
00:41:20 --> 00:41:21: the results.  
00:41:21 --> 00:41:24: Now, you know, I use obviously a lot of sums  
00:41:24 --> 00:41:27: here, but you know, the idea is this is how  
00:41:28 --> 00:41:31: you can, you know, I'll leave you with this.  
00:41:31 --> 00:41:35: DCF is really where you can, it is the most  
00:41:35 --> 00:41:39: elegant and most flexible way to to work with these  
00:41:39 --> 00:41:44: type of sustainability measures in a pro forma now.  
00:41:44 --> 00:41:47: So, Martha, I can stop here and perhaps we can  
00:41:47 --> 00:41:48: take some questions.  
00:41:49 --> 00:41:52: All right, who that was?  
00:41:52 --> 00:41:53: That's a lot, yes.  
00:41:55 --> 00:41:56: There's a lot no great.  
00:41:56 --> 00:41:58: It's it, it is really helpful to be able to  
00:41:58 --> 00:42:01: see how these numbers like go into a spreadsheet affect  
00:42:01 --> 00:42:02: your after tax cash flow.  
00:42:02 --> 00:42:04: You know, putting in the the difference as you did  
00:42:05 --> 00:42:07: between the deduction versus the credit and how that plays  
00:42:07 --> 00:42:10: in looking at at financing, for example, through C pays  
00:42:10 --> 00:42:12: where it's off the balance sheet.  
00:42:12 --> 00:42:15: So you have those, those elements that are what did  
00:42:15 --> 00:42:18: you call it an interest only loan because it doesn't  
00:42:18 --> 00:42:22: amortize, which is a little different from other traditional green  
00:42:22 --> 00:42:23: finance mechanisms.  
00:42:24 --> 00:42:26: A lot to think about here to try and really  
00:42:26 --> 00:42:31: understand how these different elements of the inflation  
React Pencil  
00:42:31 --> 00:42:34: and how you can finance them to make them work  
00:42:34 --> 00:42:35: in your business.  
00:42:36 --> 00:42:37: Yes, definitely.  
00:42:37 --> 00:42:39: And one, one thing I wanted to add is, you  
00:42:39 --> 00:42:42: know, this discussion with things like Local Law 97 and  
00:42:42 --> 00:42:45: some of the building performance measures in in Seattle and  
00:42:45 --> 00:42:46: other jurisdictions.  
00:42:47 --> 00:42:50: Well, look, you know, if you're an investor.  
00:42:57 --> 00:43:00: If you're an investor, let's say you're in an environment  
00:43:00 --> 00:43:03: like this, you've got your, you know, DCF set up,  
00:43:03 --> 00:43:05: you know, ex ante before anything happens.  
00:43:05 --> 00:43:08: So if you're going, if you think in the next

00:43:08 --> 00:43:10: 5 years your building is going to be fine, let's  
00:43:11 --> 00:43:13: say it's going to be fine, \$10 a square foot.  
00:43:13 --> 00:43:17: Well, let's take the square footage and you know, let's  
00:43:17 --> 00:43:20: say you add it right here and see how the  
00:43:20 --> 00:43:22: value of your building behaves, right?  
00:43:22 --> 00:43:27: So if I added a CapEx, extraordinary CapEx costs due  
00:43:27 --> 00:43:31: to being fined because my billing is not complying with  
00:43:31 --> 00:43:36: the emissions standards, the idea is that you know you,  
00:43:36 --> 00:43:40: it's like arranging your draw or something, right?  
00:43:40 --> 00:43:41: You know where to put things.  
00:43:42 --> 00:43:44: We would put it right here in CapEx, you know,  
00:43:44 --> 00:43:48: consult with your attorneys and your Cpas and and then  
00:43:48 --> 00:43:48: whatnot.  
00:43:48 --> 00:43:51: They'll tell you whether it's something over five years or  
00:43:51 --> 00:43:54: whether it's going to be a declining balance, but you  
00:43:54 --> 00:43:55: have where to put it right.  
00:43:55 --> 00:43:58: So if you're facing fines and you want to stress  
00:43:58 --> 00:44:01: test your model and see whether to do something based  
00:44:01 --> 00:44:04: on the current law you should care about or not.  
00:44:06 --> 00:44:07: That's terrific.  
00:44:07 --> 00:44:09: I, I know that with Seattle, at least with the  
00:44:09 --> 00:44:12: building performance standard, the fines don't come in until  
20-30.  
00:44:12 --> 00:44:14: But if you're going to be spending capital on this  
00:44:14 --> 00:44:17: and making projects happen, now is the time to start  
00:44:17 --> 00:44:19: thinking about that, to plan ahead and really make it  
00:44:19 --> 00:44:22: work in the timeline that works for improvements.  
00:44:23 --> 00:44:23: Right.  
00:44:23 --> 00:44:27: And also, yeah, in terms of transition risk, you know,  
00:44:27 --> 00:44:29: I mentioned the discount rate.  
00:44:29 --> 00:44:32: The discount rate is crucial to DCF.  
00:44:33 --> 00:44:35: If you feel that you're in an environment where the  
00:44:36 --> 00:44:39: carbonization laws are going to, you know, be more and  
00:44:39 --> 00:44:42: more stringent, the way we're going to value your building  
00:44:42 --> 00:44:45: is we're not going to value with the same discount  
00:44:45 --> 00:44:45: rate.  
00:44:45 --> 00:44:47: We have to increase the discount rate to.  
00:44:47 --> 00:44:50: Reflect the higher risk so.  
00:44:51 --> 00:44:52: DCF is very flexible.  
00:44:52 --> 00:44:55: We can just take the discount rate and put it  
00:44:55 --> 00:44:56: at 10%, right?  
00:44:56 --> 00:45:00: If we do that, you can see that the value

00:45:00 --> 00:45:05: immediately goes to, you know, about 167,000,000 as opposed to

00:45:05 --> 00:45:09: before where it was at, you know, 7% where we

00:45:09 --> 00:45:11: were closer to 210, right.

00:45:11 --> 00:45:15: So if we're in an environment that's riskier where, where

00:45:15 --> 00:45:18: your cash flows may be riskier, you can just adjust

00:45:18 --> 00:45:22: the discount rate and see whether you're in the ballpark

00:45:22 --> 00:45:26: in terms of return of investments that that you're looking

00:45:26 --> 00:45:26: for.

00:45:31 --> 00:45:33: All right, folks, no need to be shy.

00:45:33 --> 00:45:36: I know we've got a crew who is very much

00:45:36 --> 00:45:37: interested in these details.

00:45:37 --> 00:45:40: So please feel free to put questions in the Q&A.

00:45:41 --> 00:45:43: Now, Sadina, I, I do have a question.

00:45:44 --> 00:45:46: Is the spreadsheet shareable?

00:45:46 --> 00:45:48: Did you get permission to share it with our UI

00:45:48 --> 00:45:48: audience?

00:45:49 --> 00:45:49: Not yet.

00:45:49 --> 00:45:52: I have to, you know, this is part of a

00:45:52 --> 00:45:54: class that we, we, we teach at the Business School

00:45:55 --> 00:45:57: called selected topics in, in real estate.

00:45:59 --> 00:46:00: You know, I should be able to share it.

00:46:00 --> 00:46:06: I had a similar spreadsheet when I presented at the

00:46:07 --> 00:46:09: ULI spring meeting.

00:46:09 --> 00:46:12: I forgot if it's spring or fall in Toronto.

00:46:12 --> 00:46:14: You know, we, we were, I was able to get

00:46:14 --> 00:46:17: it approved, but I do need to go through care

00:46:17 --> 00:46:19: Business School first.

00:46:19 --> 00:46:21: But once I get that done, I'll send it to

00:46:21 --> 00:46:21: you.

00:46:24 --> 00:46:25: Terrific.

00:46:30 --> 00:46:32: Yeah, I mean, here I use an office building as

00:46:32 --> 00:46:32: an example.

00:46:33 --> 00:46:36: One of the there may be one of the.

00:46:37 --> 00:46:39: I would say strength of the IRA is what it

00:46:40 --> 00:46:43: does for multifamily residential where you can model

00:46:43 --> 00:46:47: everything.

00:46:47 --> 00:46:51: But again, I think if you just learn how to

00:46:51 --> 00:46:55: have inputs that are connected through a value of a

00:46:55 --> 00:46:59: building using DCFI think you can very quickly be able

00:46:59 --> 00:47:02: to build your own models and and stress test them

00:46:59 --> 00:47:02: based on how you see the environment.

00:47:08 --> 00:47:08: Absolutely.

00:47:09 --> 00:47:12: Now one more question Sadina, while we've got you.

00:47:12 --> 00:47:16: So you showed how AC pace loan would work within the spreadsheet and I'm throwing your question.

00:47:16 --> 00:47:19: Curious if you're able to, to talk us through if it was more of a traditional loan that maybe a green loan, so it has lower basis points.

00:47:19 --> 00:47:22: How, how would that differ in terms of being able to, to have that upfront funding to, to cover the incremental costs of a, a project to, to achieve the, the tax credits or deductions from an Inflation Reduction Act provision?

00:47:22 --> 00:47:25: Do you, do you have a way to model that maybe a traditional green loan, for example from a green bank and how that might look?

00:47:25 --> 00:47:27: Yeah.

00:47:27 --> 00:47:29: So I did not model it, but just thinking about it, I would say that the difference is going to be C pace is really about this, you know, this reduction in NOI because you're adding you're taking the interest and they're allowing you to add it to the real estate taxes.

00:47:29 --> 00:47:32: So real estate taxes being part of your normal operating expenses is going to lower your NOI.

00:47:32 --> 00:47:36: But that's the first point.

00:47:36 --> 00:47:40: And the second point is this accelerated depreciation, which is also going to be an extra tax tax shield.

00:47:40 --> 00:47:44: So you have lower NOI and then you have lower taxes because of higher depreciation.

00:47:44 --> 00:47:45: So if you take that out, I would say that my answer is just going to be, you know, something that's similar to this.

00:47:45 --> 00:47:47: Like for example, here we've got, you know, a loan, you know, 80% we're amortizing.

00:47:47 --> 00:47:49: So no C pace, not an interest, only ballooning loan 20 years.

00:47:49 --> 00:47:52: We you know, I use 7.83% number just as I made-up in terms of interest.

00:47:52 --> 00:47:53: But here the effect is going to be, you know, to answer your question directly is, you know, what is the incentive to go for the green loan is going

00:49:10 --> 00:49:12: to be in the lower cost of capital to the  
00:49:12 --> 00:49:13: lower interest.  
00:49:14 --> 00:49:17: So if I were to eliminate a lot of the  
00:49:17 --> 00:49:21: intricacies of C base, most of what I've seen in  
00:49:21 --> 00:49:27: the literature is going to be reflected in advantageous interest  
00:49:27 --> 00:49:28: rate, right?  
00:49:28 --> 00:49:32: So rather than regular, let's say 7.83% and maybe you  
00:49:32 --> 00:49:35: get a, you know, a 4%, you get a 4%  
00:49:35 --> 00:49:37: interest rate.  
00:49:37 --> 00:49:39: You know, your picture is going to change materially, right?  
00:49:39 --> 00:49:44: Because here, if I go back to 7.83% that I  
00:49:44 --> 00:49:49: had there, 7.83%, my first year of cash flow was  
00:49:50 --> 00:49:52: about 5.5 million, right?  
00:49:52 --> 00:49:58: But if again, argument's sake, I reduce it to let's  
00:49:58 --> 00:50:02: say 4.4%, you can see that my first year of  
00:50:02 --> 00:50:06: cash flow is going to go up, right?  
00:50:06 --> 00:50:11: So what I've seen is advantageous cost of of capital  
00:50:11 --> 00:50:17: reflected either through the interest rate, but also you can  
00:50:17 --> 00:50:21: reflect it through a longer amortization.  
00:50:21 --> 00:50:22: If I take a longer amortization.  
00:50:22 --> 00:50:24: Let's say I have 40 years, you know, I'm just  
00:50:25 --> 00:50:25: using an example.  
00:50:26 --> 00:50:30: Cash flow is going to go up significantly because here  
00:50:30 --> 00:50:33: in the first year of cash flow at 20 years,  
00:50:33 --> 00:50:37: we have 5.8 with an advantageous interest rate at 4%.  
00:50:37 --> 00:50:40: But if I now have a low interest rate and  
00:50:40 --> 00:50:42: a much higher amortization.  
00:50:42 --> 00:50:45: Let's say at 40 years pressure, cash flow goes up  
00:50:45 --> 00:50:46: almost \$1,000,000 all.  
00:50:49 --> 00:50:50: Right, that was helpful.  
00:50:50 --> 00:50:51: Thank you Sadina.  
00:50:51 --> 00:50:54: That's great to, to understand how those different elements  
00:50:55 --> 00:50:57: play  
00:50:55 --> 00:50:57: in one of the things that that we're excited about  
00:50:57 --> 00:51:00: with the Inflation Reduction Act is the, the increase of  
00:51:00 --> 00:51:03: green banks and, and other CDF is across the United  
00:51:03 --> 00:51:05: States at a, at a kind of regional level to  
00:51:05 --> 00:51:08: be able to offer this upfront financing it at better  
00:51:08 --> 00:51:11: terms for, for building owners and developers to have that  
00:51:11 --> 00:51:14: additional source of, of funding for, for green projects.  
00:51:14 --> 00:51:17: So we're hopeful that things like this will be able  
00:51:17 --> 00:51:19: to make a difference when the time comes to make



00:51:19 --> 00:51:20: those decisions.

00:51:21 --> 00:51:24: Sadina, are there any parting thoughts that you would like to share?

00:51:24 --> 00:51:24: to share?

00:51:24 --> 00:51:26: I, I don't see any questions in the Q&A.

00:51:26 --> 00:51:27: So you're off the hook.

00:51:27 --> 00:51:29: But if you have any parting thoughts that you would like to share with our audience and and recording for whoever listens to this in the future.

00:51:29 --> 00:51:32: like to share with our audience and and recording for whoever listens to this in the future.

00:51:32 --> 00:51:33: Yeah, I mean, I think sometimes modelling can be a little intimidating, just.

00:51:34 --> 00:51:38: Because there's a lot of.

00:51:38 --> 00:51:39: Numbers, but I would say that it's not that complicated, right DCF is really you know easy to learn it's a matter of just discounting cash flow.

00:51:39 --> 00:51:41: So I think once you have a framework such as DCF that you can understand, then it's just a matter of adding more inputs and and see how.

00:51:41 --> 00:51:45: The.

00:51:45 --> 00:51:48: How to model reacts.

00:51:48 --> 00:51:51: But you know, I'm hopeful that, you know, we, we can continue sort of modeling transition risk and, you know, having this discussion, you know, really at the Nexus of finance, sustainability, so on and so forth to really show that inflation Reaction Act.

00:51:51 --> 00:51:54: And, you know, policies like that, major pieces of legislation are really accretive to the bottom line.

00:51:54 --> 00:51:58: Whether you're a big landlord or, you know, a small one.

00:51:58 --> 00:52:01: At the end of the day, you're looking to maximize cash flows and reduce risk.

00:52:01 --> 00:52:01: And you can do that in an elegant fashion using DCF.

00:52:01 --> 00:52:02: Beautiful.

00:52:02 --> 00:52:03: All right.

00:52:03 --> 00:52:07: Well, I don't think we need any other words beyond that.

00:52:07 --> 00:52:12: That was a beautiful way to close.

00:52:12 --> 00:52:17: Thank you again Sadina for taking the time to walk us through the discounted cash flow and all of these different considerations when modeling the Inflation Reduction Act and it's and it's impact on the balance sheets.

00:52:17 --> 00:52:21: and it's impact on the balance sheets.

00:52:21 --> 00:52:23: and it's impact on the balance sheets.

00:52:23 --> 00:52:26: and it's impact on the balance sheets.

00:52:26 --> 00:52:28: and it's impact on the balance sheets.

00:52:28 --> 00:52:29: and it's impact on the balance sheets.

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00:52:53 --> 00:52:56: and it's impact on the balance sheets.

00:52:56 --> 00:52:58: and it's impact on the balance sheets.

**00:52:59 --> 00:53:00:** Thank you again for taking the time.  
**00:53:00 --> 00:53:03:** And for everyone else, webinar number three of three in  
**00:53:03 --> 00:53:05:** the series is coming up on September 30th.  
**00:53:05 --> 00:53:07:** The link to register is in the chat.  
**00:53:07 --> 00:53:09:** If you want to make it 3 for three, we  
**00:53:09 --> 00:53:11:** would love that and we'll see you next time.  
**00:53:12 --> 00:53:12:** Bye everyone.

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