




Oregon E-cycles:
**An analysis of existing and conceptual
registration fee models**

Stakeholder Committee

11/29/11

DRAFT



Land Quality Division

Overview

1. Current fee model – why it's not working
2. Conceptual Models
3. Key issues

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Beth showed us the Oregon E-Cycles budget analysis.

Loretta explained our efforts and successes for reducing the costs.

Now we'll discuss the current fee model and why it's not working. I'll then present some conceptual fee models. We'll wrap up by discussing some of the key issues we face in developing a new fee model and ask for your feedback.

Finally, we're not here to choose a fee model today, but rather get feedback on some key issues that can help refine the conceptual models.



Key issues for discussion

1. Are we considering the appropriate criteria to develop the fee models?
2. How closely should the fee match market share?
3. Are there other models we should consider?
4. Which models do you like or dislike? Why?



Current Fee Model

Market Share	Fee
> 1 %	\$15,000
0.1% ≤ 1%	\$5,000
0.01% < 0.1%	\$200
< 0.01%	\$40

Authority:

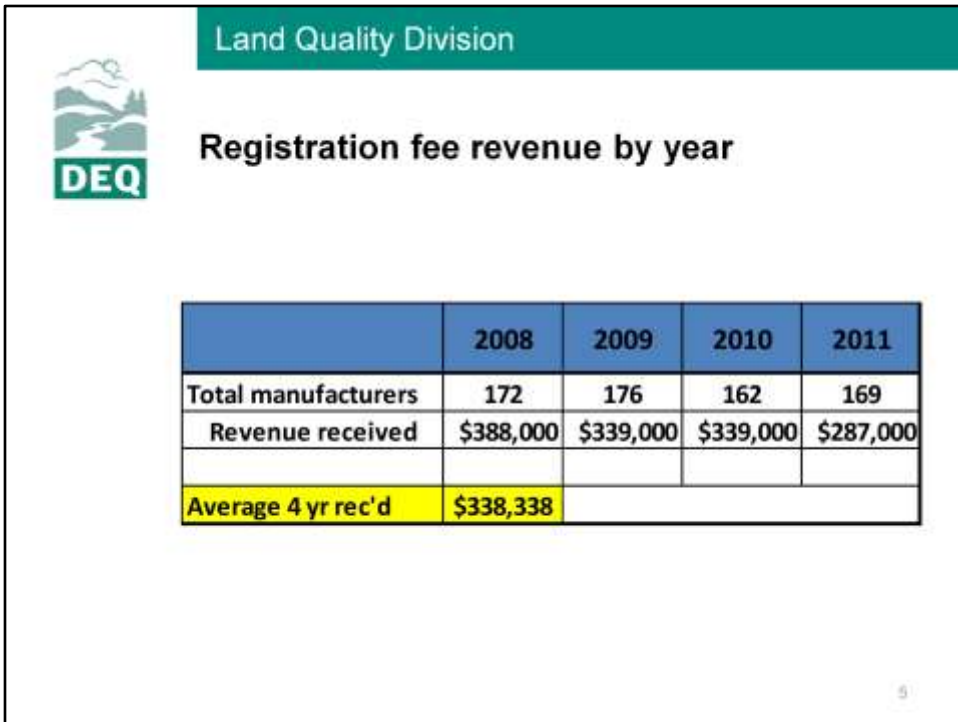
ORS 459A.315 Registration by manufacturer; fees.

ORS 459A.340 Duties of department.

"Determine a manufacturer's annual registration fee for purposes of ORS 459A.315 (2) using national market data prorated for Oregon based on statewide population."

This is the current structure DEQ uses to determine registration fees.

The 2007 legislature established this model. Fees in this model are determined by a manufacturer's market share. Let's take a look at how this model has performed for the E-cycles program.



The first thing I want to point out is that over the past 4 years, the program has received an average revenue of \$338K. Clearly, this number falls short of the base operating budget (that Beth presented) of 360K and is about 100K short of the proposed future revenue target (used for discussions today) of 425K.

We can see that the total number of registered manufactureres over the past 4 years has stayed very constant. Our received revenue, however, has fluctuated as much as \$100,000 dollars over the same 4 year period. Notice the \$100,000 decrease in revenue between 2008 and 2011, while the total number of manufacturers only decreased by 3 over that same period.

The fluctuating revenue is due manufacturers shifting from higher paying tiers to lower paying. Over the last 4 years, a 2% decrease in the number of manufacturers (going from 172 to 169) yeilded a 25% decrease in revenue (\$388K to \$288K). This point makes it clear that the structure of the current fee tiers are not reliable nor able to support the program in the future.

Now let’s turn to the issue of EQUITY. When I say equity, I am questioning how fairly are the registration costs distributed among manufacturers? One way to measure equity is to see how closely a manufacturers fee matches their fee if they would have paid a straight percentage of the total revenue generated based on their market share. I should say that equity can have many definitions, and that’s one key issue we’ll be asking for stakeholder input on. For the meantime, however, let’s now look at the equity of the existing fee structure.

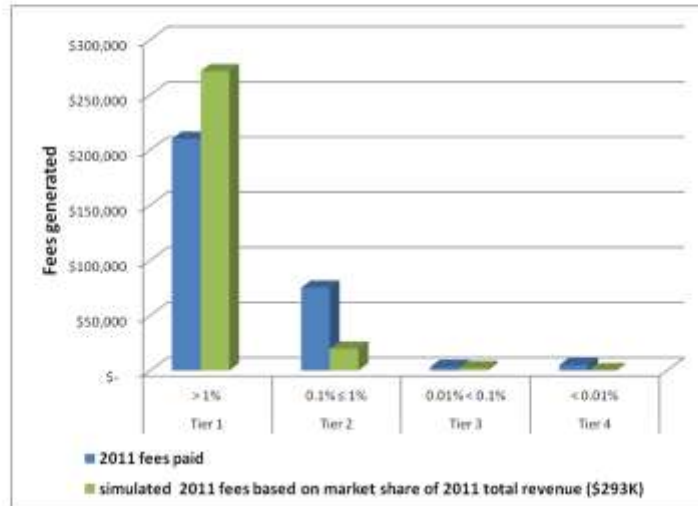


Shifting tiers affects revenue

	2010	2011
Tier 1 (\$15,000)	16	14
Tier 2 (\$5,000)	18	15
Tier 3 (\$200)	18	16
Tier 4 (\$40)	110	124
Total mnfs	162	169
Total revenue	\$338,000	\$287,000



2011 revenue + market share simulation



The blue bars represent how much the manufacturers in each tier contributed to total revenue in 2011. The green bars represent how much the tiers WOULD have contributed if they paid fees based on the straight percentage of their market share for the 293K total revenue generated in 2011. For example, the tier 1 manufacturers, represent 93% of the total market share. 93% of 293K is \$271K, which is shown in the green bar, but the tier 1 manufacturers only paid \$210K, which represents only 71% of the total revenue. So, according to this view of equity, manufacturers in Tier 1 are dramatically underpaying.

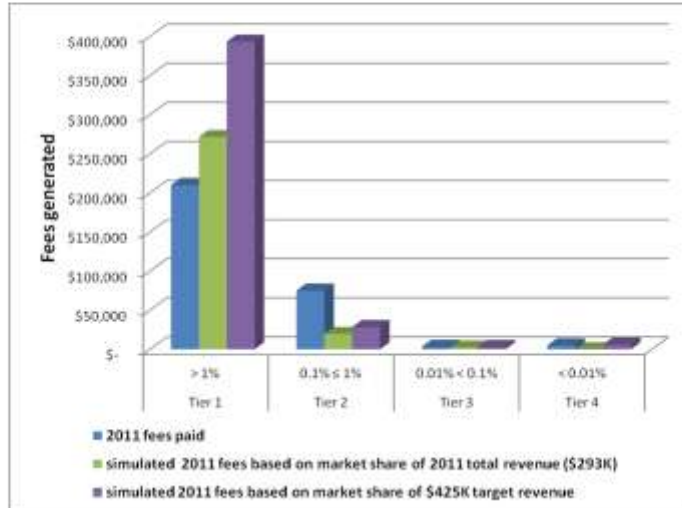
The situation changes for Tier 2 manufacturers. In this case, they're actually overpaying as you can see where the blue bar (the actual fees paid) are higher than their projected market-share based fees.

Again, this is just one way to look at equity that we have found helpful in this exercise. We'll continue to use this method as a point of comparison for discussion today, but we're looking for other ideas about how to analyze the equity of any given fee model.

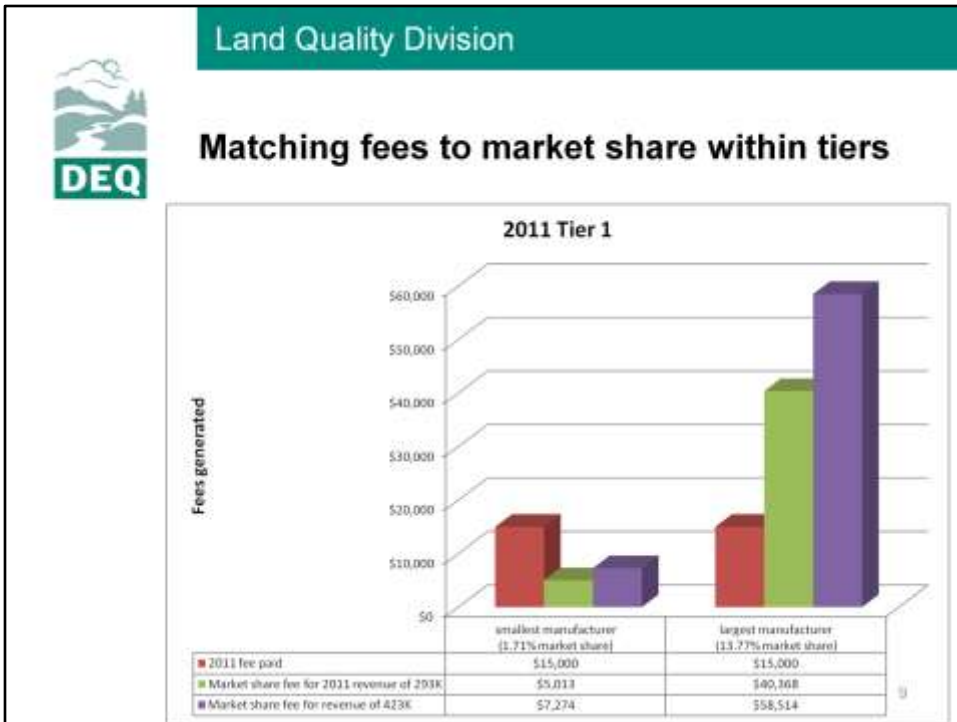
I'm now going to show you the same chart but add a bar that projects what 2011 tiers would have paid if of projected budget of \$423K was actually attained and was allocated based on market share.



2011 revenue + market share simulations



Again, we see that Tier 1 manufacturers would be dramatically underpaying but all the other tiers would be fairly close to their target.



One last point to consider about equity is how closely an individual manufacturer’s fees match a proportional market share-based fee. You’ll notice here that in 2011, the smallest manufacturer in Tier 1 had a 1.71% market share while the largest had a 13.77% market share. Each of these manufacturers paid a \$15,000 registration fee. We can look at the total revenue for 2011, which was 293K and ask what each of the respective fees would be if they were directly proportional to market share. That is – for the smallest manufacturer in Tier 1, you would multiply their market share by the total revenue, which would result in a hypothetical fee of \$5,000. Using this same methodology, the larger manufacturer would have paid \$40,000. The same analysis is shown in purple but based on the 423K target. The main point here is that even within tiers inequity exists where larger manufacturers are underpaying and smaller ones are overpaying.

In summary, the current fee model is not working for the following reasons:

1. Average revenue generated does not meet any of the projected target revenues
2. Actual revenue generated is variable and responds poorly to market conditions over time
3. The model is not equitable – large manufacturers are underpaying and in some cases, smaller manufacturers are overpaying.

So, with this foundation in mind, let’s talk about some of the conceptual fee models we developed to generate discussion



Development criteria for conceptual fee models

1. Annually, the model meets our target revenue of \$425,000.
2. The fees closely match market share for individual manufacturers or tiers of manufacturers.

QUESTION – do we have an ANNUAL target revenue or just an AVERAGE? I think it should be ANNUAL. Especially for existing tiers, there’s still too much variability to depend on averages.

Here are the 2 criteria that we considered when generating conceptual models.

One key issue to keep in mind as we discuss a few models is whether we’re considering the appropriate criteria



Registration Fee Models Reviewed Today:

1. Existing fees
2. 25% increase
3. Straight market share
4. 6-tier market share
5. 6-tier market share w/ 20K cap
6. Flat fee
7. 8-tier
8. 360 surcharge



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25% increase in existing tiers

Average 4 yr rec'd	\$338,338
Target Revenue	\$425,000
% increase in revenue needed	25%

Market Share	Current Fee	25% increase in fee
> 1%	\$15,000	\$18,750
0.1% ≤ 1%	\$5,000	\$6,250
0.01% < 0.1%	\$200	\$250
< 0.01%	\$40	\$50

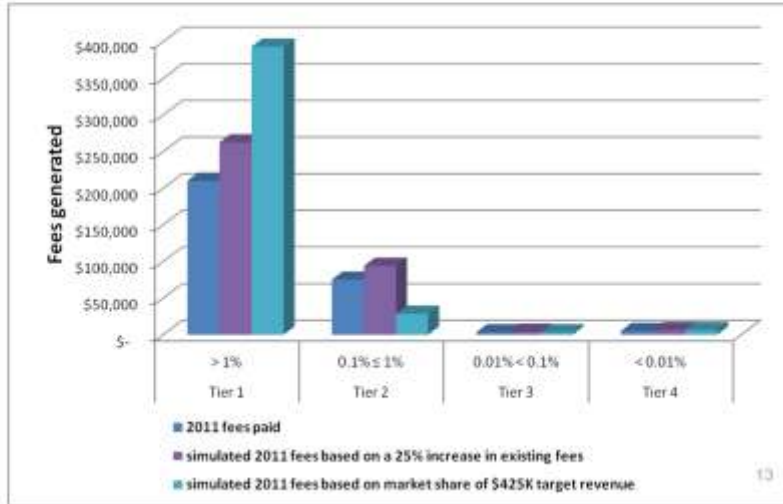
25% increase in all tiers against historical market share data				
	2008	2009	2010	2011
Total \$ received	\$484,900	\$460,700	\$422,500	\$366,450
4-year average	\$433,638			

Here's the first model. Our average 4-year revenue is 338K. We'd need a 25% increase in revenue to meet our 425K target. So, we simply increased all tiers by 25% to see how it performed against historical data.

The good news is that on average we do meet the target revenue. That's not a surprise, b/c that's exactly how the model was developed. Let's now take a look at how equitable the model is. That is- how well does the model distribute fees as a function of proportional market share?



“25% increase” + market share simulations



In this chart you'll notice that a 25% increase in fees does bring the Tier 1 manufacturers slightly closer to their proportional market share fees but actually increases the gap between proportional market share fees and actual fees for Tier 2 manufactures. So, we have essentially the same problem with equity between tiers.

Additionally, if you looked at equity within Tiers 1 or 2, you'll find that the same trend exists where big manufacturers are underpaying and small manufacturers are overpaying.



Straight market share model

Facility	2011 Market Share	\$425,000	Current fee	%change from current fee
Manufacturer 1	13.77%	\$58,514	\$15,000	290%
Manufacturer 2	13.62%	\$57,882	\$15,000	286%
Manufacturer 13	3.00%	\$12,735	\$15,000	-15%
Manufacturer 14	1.71%	\$7,274	\$15,000	-52%
Manufacturer 15	0.97%	\$4,104	5000	-18%
Manufacturer 29	0.13%	\$545	5000	-89%
Manufacturer 30	0.09%	\$390	200	95%
Manufacturer 44	0.01%	\$61	200	-70%

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Here's a model based on directly proportional market share for each individual manufacturer. Basically, if our target revenue is \$425K, and you have a 10% market share, you'll pay 10% of the target revenue, which is 42K.

The advantages of this model are that we'd always meet our target revenue, fees would be reduced for about 35 manufacturers (not including the min fee manufacturers), and it is the most equitable model- in that a manufacturers fees are directly proportional to their market share.

Disadvantages include an increase in fees for about 18 manufacturers. Largest manufacturers have up to a \$40,000 increase in fees.

The purpose of this slide is to demonstrate the simplest, most reliable, and most equitable fee structure possible. Virtually all Tier 2 and 3 manufacturers have a decrease in fees and most Tier 1 manufacturers have an increase in fees.

I'm not going to show an "equity" chart b/c this model is literally the equity model against which others are compared.



6 Tier – proportional market share

Tier	Market Share	Fee
1	≥ 10%	Proportional MS of all manufacturers in tier divided evenly among all manufacturers
2	≥ 5% < 10%	
3	> 1 < 5%	
4	0.1% ≤ 1%	
5	0.01% < 0.1%	
6	< 0.01%	

example

Tier	Facility	Market Share	Proportional fee	Tiered fee
1	Manufacturer 1	10%	\$42,500	\$53,125
1	Manufacturer 2	15%	\$63,750	\$53,125

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This model is a combination of a proportional market share model with a tiered model. We further divided the existing Tier 1 into more differentiated tiers since there was significant disparity in market share among Tier 1 manufacturers.

Below is an example of how the tiers work. In this example, there are only 2 manufacturers in Tier 1, which is not an uncommon scenario. The directly proportional market share based fee is assessed based on our target revenue of 425K and you add up all the fees and divide by the total number of manufacturers.

The next slide shows a real example using the same 2011 data and manufacturers.



6 Tier – proportional market share

Tier	Facility	2011 Market Share	\$425,000	\$425,000 straight	Current fee	%change from current fee
1	Manufacturer 1	13.77%	\$54,467	\$58,514	\$ 15,000	263%
1	Manufacturer 2	13.62%	\$54,467	\$57,882	\$ 15,000	263%
2	Manufacturer 13	3.00%	\$12,700	\$12,735	\$ 15,000	-15%
3	Manufacturer 14	1.71%	\$12,700	\$7,274	\$ 15,000	-15%
4	Manufacturer 15	0.97%	\$1,891	\$4,104	\$5,000	-62%
4	Manufacturer 29	0.13%	\$1,891	\$545	\$5,000	-62%
5	Manufacturer 30	0.09%	\$146	\$390	\$200	-27%
5	Manufacturer 44	0.01%	\$146	\$61	\$200	-27%

The advantages of this model are that it always meets the target revenue and is just slightly less equitable than the MS straight model. Generally, within any given tier the larger manufacturers pay less (up to 10K less) and the smaller manufacturers pay more (up to 10K more). Reduces the fees for about 40 manufacturers (not including min fee manufacturers).

Disadvantages include fee increases for about 6 manufacturers. Largest manufacturers have up to a \$40,000 increase in fees.



6-tier market share model with 20K Cap

TIER	Market Share	2011 fees paid	total market share	6-tier MS w/ 20K cap	simulated 2011 fees based on market share of \$425K target revenue
Tier 1	≥ 10%	\$ 45,000	39%	\$60,000	\$164,000
Tier 2	≥ 5% <10%	\$ 90,000	39%	\$120,000	\$165,000
Tier 3	> 1 < 5%	\$ 75,000	14.90%	\$100,000	\$63,000
Tier 4	0.1% ≤ 1%	\$ 75,000	6.69%	\$128,168	\$28,422
Tier 5	0.01% < 0.1%	\$ 3,200	0.76%	\$14,465	\$3,007
Tier 6	< 0.01%	\$ 4,960	0.03%	\$5,850	\$6,200

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Here is a 6-tier proportional market share model with a 20K cap. Any fee over 20K gets redistributed based on market share to the smaller manufacturers.

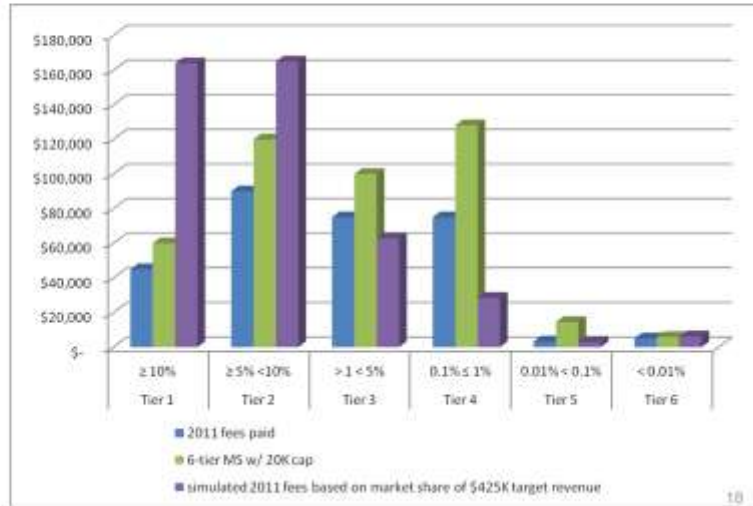
Advantages of this model is that it will always meet the target revenue.

Disadvantages of this model is that everyone's fees goes up and the structure of the cap and redistribution of dollars puts an extra burden on smaller manufacturers.

Fee is compared with current fee and market share fee



6-tier market share model with 20K Cap



Disadvantages of this model is that everyone’s fees goes up and the structure of the cap and redistribution of dollars puts an extra burden on smaller manufacturers. This model increases inequity in Tiers 2 and 3 substantially.



Flat fee model - \$8,000

Market Share	Current Fee	Flat Fee	% change
> 1 %	\$15,000	\$8,000	-47%
0.1% ≤ 1%	\$5,000	\$8,000	60%
0.01% < 0.1%	\$200	\$8,000	3900%
< 0.01%	\$40	\$60	50%



Flat fee of \$8,000 compared against historical market share data				
	2008	2009	2010	2011
Total \$ received	\$455,680	\$472,460	\$456,040	\$367,440
4-year average	\$437,905			



8-Tier Model

Tiers	Market Share	Current fees	Proposed Fee
1	≥15	\$15,000	\$60,000
2	> 12.5 <15	\$15,000	\$50,000
3	≥ 10 < 12.5	\$15,000	\$40,000
4	≥ 5 < 10	\$15,000	\$20,000
5	> 1 < 5	\$15,000	\$15,000
6	0.1% ≤ 1%	\$5,000	\$5,000
7	0.01% < 0.1%	\$200	\$200
8	< 0.01%	\$40	\$50



	2008	2009	2010	2011
Revenue	\$ 459,100	\$459,800	\$464,050	\$419,400
Average hist	\$ 450,588			

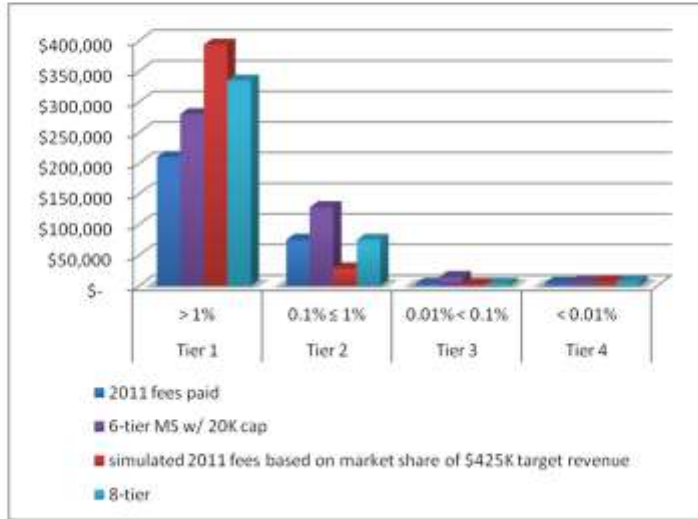
Changes to the tier model.

Adds in 2 more tiers at the top.

First adjustment – based on groupings by market share.



8-tier comparison w/ other models





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360 target with surcharge

Tiers		Current Fees	360 target w/surcharge fees
1	≥ 10%	\$15,000	\$25,000
2	≥ 5% <10%	\$15,000	\$20,000
3	> 1 < 5%	\$15,000	\$18,000
4	0.1% ≤ 1%	\$5,000	\$3,600
5	0.01% < 0.1%	\$200	\$360
6	< 0.01%	\$40	\$40



	2008	2009	2010	2011
Revenue	\$441,880	\$429,440	\$394,680	\$349,720
4-year average	\$403,930			

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The 360 target with surcharge model was developed to recognize our base operating revenue and provide a surcharge in years when revenue received do not meet our target revenue. First, we broke up Tier 1 into additional tiers and assigned Tiers 3 through 6 a fee directly proportional with the upper range in the tier and the 360K target. For example, Tier 3's upper range is 5% market share. So, we then took 5% of 360,000, which is 18,000 and made that the fee. For Tiers 1 and 2, we assigned higher fees but they were simply assigned and not correlated to anything in particular.

We then ran this model through the 4 years of historical data and as you can see, it produced an average of 403,000 dollars, and fluctuated as much as 100,000 dollars between years. So, let's look at just 2011 to see how the surcharge could be calculated.

**Surcharge distribution example**

2011 revenue generated	\$349,720
2011 target revenue	\$425,000
Surcharge amount	\$75,280
Number of Tier 1 and 2 manufacturers	9
Surcharge cost per manufacturer	\$8,364

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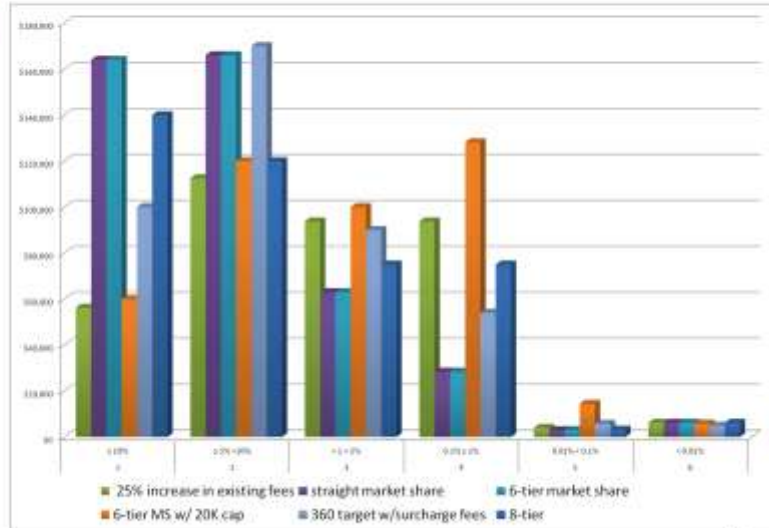
This displays tiers based on market share - a surcharge for larger manufacturers can be added to make up any revenue shortage.

The surcharge is applied in years when the tiers do not meet the targeted revenue.

Tiers 1 and 2 pay the difference – two possible ways to apportion the amount are:
Simply divide by the number of manufacturers
Allocate amounts based on market share



Comparison of all models using 2011 data



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Summary analysis

Model	Criteria	
	Generate 425K? Annually	Fee close to market share?
exiting fee	no	no
25% increase	no	no
straight market share	yes	yes
6-tier market share	yes	yes
6-tier market w/20 K cap	yes	no
Flat fee	no	no
8 tier	yes	sometimes
360K surcharge	yes	sometimes



Key issues for discussion

1. Are we considering the appropriate criteria to develop the fee models?
2. How closely should the fee match market share?
3. Are there other models we should consider?
4. Which models do you like or dislike? Why?