

# Chapter 6 ECONOMICS

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# 6. ECONOMY - WINDBANK

6.0 WINDBANK – Introduction and step-by-step guide	399
6.0.1 Introduction to WINDBANK	
6.0.2 WINDBANK Step-by step-guide	
6.1 WINDBANK – Calculation methods and key figures	
6.1.1 Calculation methods	
6.1.2 Key figures	
6.2 WINDBANK – Entering data	
6.2.0 Start the WINDBANK module	
6.2.1 Open a template	
6.2.2 Setup	
6.2.3 Project	
6.2.4 kWh Price	
6.2.5 Budget	
6.2.6 Loan	
6.2.7 O&M (Operation and Maintenance)	
6.2.8 Inflation, etc.	411
6.2.9 Taxation	
6.2.10 Description	
6.3 WINDBANK – Calculation and printouts	
6.3.1 Starting calculation	
6.3.2 Printouts	

#### 398 · 6.0.1 Introduction to WINDBANK

## 6.0 WINDBANK – Introduction and step-by-step guide

## 6.0.1 Introduction to WINDBANK

The financial evaluation of a wind energy project may be the most important project development task. It is, in the end, when all needed approvals are settled, the financial circumstances of the project, which decide whether or not the project will be realized. With the WindPRO module WINDBANK such a decision will be taken on a well-documented basis.

All the documentation, as well as a survey with few key figures and a complete budget, which will satisfy bankers and other qualified office managers, can be printed.

The WindPRO module WINDBANK is, in the present version, furnished with a line of specific facilities which correspond to the Danish tax law, but it will operate under more general conditions when investor is located in other countries.

WINDBANK handles 4 different "owner constructions":

Cooperatives - where special calculations for each coop can be generated Private owned – where the owners private tax issues can be mixed with the wind farm investment Company owned – "standard" company investment Company coop – more companies has shares in the project, prints for a specific share possible.

WINDBANK can also be used for economic evaluation (the value for the community), it is just a question of proper selection of the relevant input data.

The WINDBANK module is based on templates, which makes it fast to define a new calculation based on previous calculations, where only minor corrections has to be made.

#### 6.0.2 WINDBANK Step-by step-guide

- **q** Calculate the energy production with PARK or METEO/MODEL (to be able to transfer WTG-type, size and energy production automatically)
- **q** Start the WINDBANK module load a template from "Standard" or other previous calculation.
- **q** Go through all tab-sheets in order to define all parameters.
- **q** Calculate and Print reports.

## 6.1 WINDBANK – Calculation methods and key figures

#### 6.1.1 Calculation methods

As previously mentioned, WINDBANK is furnished with special features which are constructed for calculations based on Danish regulations (especially tax regulations), but in all other cases, WINDBANK operates after the often standardized general taxation and depreciations regulations which are used in most other countries. Facilities for calculations based on specific regulations in other countries but Denmark will be developed upon request.

Basically, an annual account is divided into the following items (based on general accounting principles):

#### **Operation budget:**

+Income (sale of electricity + evt. value of replaced consumption generated by the WTGs)
 -Expenditures (O&M + Book Depreciations = reduction in the value of the Installations)
 =Working Profits, Ordinary, before tax and interests

-Financing (Interests only) -Taxation **=Working Profits** 

**Balance budget:** ASSETS Installations (value of hardware after Book Depreciations) Cash Balance (amount on account where the annual liquidity is accumulated)

LIABILITIES Net Worth (own capital) Debts

The Annual Liquidity consists of the annual growth of the cash balance. It is important to face the difference between "operation budget" and "liquidity budget".

The liquidity budget (or cash flow) gives the year by year amount available for investor including taxation. The operation budget expresses the year by year value of the project. Here the depreciation reflects the annual loss in value, whereas in the liquidity budget, the depreciation is "replaced" with the annual repayment of loans and thereby the amount that "in real" is withdrawn from the cash balance.

Operation budgets as well as liquidity budgets can be printed.

#### 6.1.2 Key figures

An essential print from WINDBANK is the RATIOS. With these a fast look will tell if the calculation setup is reasonable or some unit has been wrong leading to wrong result.

Below an example of key figures (ratios)

RATIOS			
Drag the cursor around the area you want to captur	· /kW	/ /m2	/MWh
Preliminary expenses US\$	1.96	7 -	770
O&M costs average US\$/years	53,2	2 -	20,8
Energy production kWh/Years	2.554	- 1	-
Minimum life span for redemption of loan		13,2 Y	
Simple pay back time		9,9 Y	'ears
Acc. liquidity, deflated			nio. US\$]
in % of investment		35,5 %	6
Net present value (Interest rate=6,0%)			mio. US\$]
Internal rate of return		8,5 %	
Return on investment		35,5 %	
Production price at calculation interest 5,	0%	9,9 c	ent/kWh
exceeds the remaining debt. Simple pay back time is the number of ye investment + operation costs within pay b and inflation are not included. Acc. liquidity, deflated, is the total accum project (includes tax etc.), deflated. Same indicator of the expected value of the pro- Net present value (interest rate Internal rate of return is the discount rate value of zero for the cash flow. Here is in	back time. ulated pro e in % of i ject for the that resul cluded all	Finance cos fit at the end nvestment is e private inve ts in a net pr payments;	ts, tax l of the a good estor. resent
investment, O&M, sales of energy etc., b minimum be X as defined above.			Should

Apart from the text above, following evaluations can be performed based on "modern turbines" > 500 kW:

Preliminary expenses (investment) should be (ultimo 2009 based) 1300 - 2500 US or  $1000 - 2000 \in \text{per kW}$  for onshore projects. Very deciding is the specific power – large rotor area per kW is in the high end. E.g. A Vestas V90 (90 m rotor diameter) is sold with as well 1.8 as 3 MW generator, the first mentioned will have an essential higher cost per kW.

Price per MWh should be between 400 – 800 US\$ or 300-600 €.

O&M costs should be 15-25 US\$ or 10 - 20 € per MWh.

Energy production 1500-6000 kWh/year/kW (full load hours) – this is a wide span reflecting that wind recourses can be very different over the world.

See <u>http://www.emd.dk/files/Vindmøllers%20økonomi\_EMD-Feb2010.pdf</u> for more info on as well on as offshore project statistics and key figures.

## 6.2 WINDBANK – Entering data

#### 6.2.0 Start the WINDBANK module

Click the green (or yellow for DEMO-mode) arrow in front of the WINDBANK module in the WindPRO main menu, and the input form will appear. But before you do this, you must enter some basic information in WindPRO Project properties (country, etc.) (See Chapter 2.BAISIS for further information on how to create a WindPRO project).

#### 6.2.1 Open a template

Look in	: 🚺 Standards	<u> </u>	- <b>™</b> III ▼			
œ.	Name		Date modified	Туре	Size	Τi
Recent Places	PN_DK_Pr	ivat_1,3MW, DKK_2.wbs	19-09-2002 12:49	WBS File	10 KB	
Recent Flaces	📄 TEst-fejl io	alånberegning.wbs	20-08-2002 01:45	WBS File	9 KB	
_	PN_DK_Pr	ivat_660kW, DKK_2.wbs	12-02-2002 19:27	WBS File	9 KB	
Desktop	PN_DK_Pr	ivat_660kW, DKK.wbs	21-06-2001 21:06	WBS File	12 KB	
	EMD_DK_	elles_2x1 MW_m.fuldlast, DKK.wbs	08-06-2001 15:27	WBS File	9 KB	
	test DKK.v	/bs	15-02-2001 15:46	WBS File	9 KB	
Per Nielsen	EMD_DE_E	inzelnbetrieb_1,5MW, DM.wbs	23-10-1998 13:26	WBS File	9 KB	
	EMD_DE_E	SetreiberGMBH_1,5MW, DM.wbs	23-10-1998 13:26	WBS File	8 KB	
	EMD_DK_	Privat_750kW, DKK.wbs	13-10-1998 23:19	WBS File	8 KB	1
Computer	EMD_DK_	Felles_3x1 MW, DKK.wbs	13-10-1998 23:01	WBS File	9 KB	
	EMD_US_	Private_1,5MW, USD.wbs	13-10-1998 22:19	WBS File	8 KB	
Network	EMD_US_	Coop_1,5MW, USD.wbs	13-10-1998 22:18	WBS File	8 KB	
	CameraDI	3	17-02-2010 00:11	File Folder		
	•					•
	File name:	EMD_US_Private_1,5MW, USD.wbs			▼ Op	en
	Files of type:	WINDBANK Default values(*.wbs)			▼ Can	cel

The first item that will appear is the option of selecting a Template. A Template is a file, which contains some predefined data, which makes it faster to fill-in the input forms.

Some demonstration templates is offered in the folder WindPRO Data\Standards\

You can always save your own current WINDBANK calculation as a Template and load from another project.

Templates can, of course, be copied and distributed to other users. This will ensure uniform presentations and calculations. Make sure not to delete these templates when WindPRO is installed/reinstalled or you tidy up in the file structure. We recommend that you save a backup of these templates.

#### 6.2.2 Setup

In Setup you specify:

Country, project; The name of the country for the project location in question has already been selected under Project Properties.

Country, Investor – gives at present only any difference if the investor is located in Denmark, while this gives access to specific Danish tax regulations.

Currency can be entered freely - this is only a text, which is appended to all printed figures. The choices for amounts/reports shall reflect the size of the project you are going to calculate.

Type of project refer to the owner type, which for some input options gives access to different features.

💐 Edit input for economy calc	ulation	
Setup Project KWh Price	Budget Loan O&M Infl. etc. Taxation Description	Next
Template: C:\Users\p	er.EMD\Documents\WindPRO Da' 🔲 Use every time	
Country, project United Sta	tes 🗾 Country, investor : United States 💌	<u>O</u> k
Base	1/100 * 1,000 * 1,000,000	
Currency: US\$	cent 1000 US\$ mio. US\$	<u>C</u> ancel
Amount (Budget/Loan)	C US\$ C 1000 US\$ C mio. US\$	
Amount (O&M) Reports, project	C US\$ C 1000 US\$ C mio. US\$     C US\$ C 1000 US\$ C mio. US\$	
Reports, share holders	US\$ 01000 US\$ 0 mid. US\$	
Elec. price	€ cent/kWh CUS\$/kWh CUS\$/MWh	Advanced
Energy	⊂kWh ⊂ MWh ເ⊂ GWh	
Type of project		
C Cooperative WTG C Privately owned WTG	<ul> <li>○ Business WTG in shares</li> <li>ⓒ Company owned WTG</li> </ul>	
S T matery owned WTO	S company owned who	
		1
		Save template
T		

If you mark the 'use every time' under Template you will always begin with this template when you activate WINDBANK.

If you mark 'Cooperative owned' as project type, you must enter the size of a share (in kWh) and number of shares for the "typical" Coop you wish to make a calculation for.

#### 6.2.3 Project

W Edit input for economy	/ calculation	
<u>Setup</u> Project <u>k</u> Wh F	Price Budget Loan O&M Infl. etc. Taxation Description	Next
Name of calculation:	Company owned_3 MW WTG	
Data for WTGs/produc		<u>O</u> k
C User defined C Use WTG from obj	C Load from energy calculation     C Link to energy calculation	
C Use WTG from Wi		<u>C</u> ancel
Energy calculation:	PARK: Waste Water plant 50 x 3 MW 94m hub	
	VESTAS V112 3000 112.0 !O! hub: 94,0 m (594)	
Select all	VESTAS V112 3000 112.0 !O! hub: 94,0 m (595)	Advanced
Deselect all	VESTAS V112 3000 112.0 !O! hub: 94,0 m (597)	
	VESTAS V112 3000 112.0 !O! hub: 94,0 m (598)	
WTGs:	50 Include per WTG total	
Installed power:	3.000 kW 150.000 kW	
Calculated production:		Cave templete
Calculated production -		<u>Save template</u>
New WTG	C Existing WTG	
Installation date:	12-2011 Expected life span: 20	
		and the second se

The name of the calculation will appear on all the printed pages. This can be used to specify the particulars of the calculation in question - e.g. High Inflation Rate, Low kWh Price, etc.

The data regarding the production of the WTGs can be entered in various ways:

- Ø User defined: All data input are free.
- Ø Use WTG from object list: You get a list box with the names of the WTGs established as objects in the project (if any).
- Ø Use WTG from WindCat: You get a list box with the names of all the WTGs in the WTG Catalog.
- Ø Load from Energy Calculation: You import information from an already performed Energy Calculation into this project.
- I Link to Energy Calculation: As the above option, but with an automatic update of the calculation whenever the information in the Energy Calculation is changed.

The field 'Calculated Production - 10%' will often be used to balance the uncertainties of the Energy Calculation. The 10% will often not be sufficient, as the estimated figure depends heavily on the terrain conditions and the available Wind Data. The 10% can be set to other value in the energy calculation and will by "load from energy calculation" be transferred to WINDBANK.

You can choose to perform calculations on "existing WTG", meaning that instead of Expected life span, you are asked to enter Remaining life span. The life span of a turbine project is normally 20 years, while the design basis of turbines typically is 20 years.

**Installation date** is very important to know how works: If the month 12 is used, the project is assumed installed the 31.12 and thereby there will be tax savings due to depreciation for the year "0" (installation year), but no income or costs – these will be 12 months based for the year 1. If another month is used, it will be the

end of the month installation is assumed. So installation in month 1 will give 11 months income and costs. There will be 12 month based depreciation

#### 6.2.4 kWh Price

"	¥ 1	Edit input for economy	calculation	of an instal				
	<u>S</u> e	tup Project <u>k</u> Wh F	Price Budget	Loan <u>O</u>	&M <u> I</u> nfl. etc. <u>T</u> axation	Description		Next
	Nu	mber of decimals in e	electricity pric	es				
				_				<u>k</u>
	Nc	h Price, WTG energ	Share of	Price	Properties		Hours / edit / Ann inc	<u>C</u> ancel
				[cent/kWh]				<u></u> ancer
	1	Sales price	100 %	7,0000	Input annual increase		2	
		Subsidy, 10 Years	100 %		Annual values	Ŧ		
								Advanced
1								
8								
								Caus tamplata
								Save template
i								
		Add Del	ete					
	_							

You can construct your own specific profile for the expected kWh price over the life span. If a part of the electricity is used for own consumption and another part is sold, both parts can be given individual pricing profiles.

The options for each input line are:

Name; e.g. Market price or Subsidy etc.

**Share of production**; If production is sold to different purchasers, or some of the production is used by owner specific prices can be given for specific parts of the production. In most cases there is only one and 100% is used.

Price; remember to input in the right unit as specified in tab "Project".

- Properties, the options are (in combination with the field Hours... to the right):
  - Input annual increase input the annual increase percentage in field to the right.
  - · Inflated the inflation specified at the "Infl. Etc" tab is used for increasing the annual price.
  - Annual values freely defined annual values, see below.
  - Limited by full load hours input the number of full load hours with the increased price in field to the right.

When "Annual values" is chosen, the input form below appears:

Year	Subsidy, 10 Years	â	Ok
2044	C	8	Cancel
2011			
2012	3,0000		Fill in
2013	3,0000		
2014	3,0000		
2015	3,0000		Copy
2016	3,0000		
2017	3,0000		Paste
2018	3,0000		-
2019	3,0000		
2020	3,0000		
2021	3,0000		
2022	0,0000		
2023	0,0000		
2024	0.0000		
2025	0,0000		
2026	0.0000		

Here year by year values can be entered. With the "fill in" button, the current (selected) field value will be filled down to all remaining fields.

To review/edit annual values, just click in the field to the right.

#### 6.2.5 Budget

<u>S</u> et	tup Project KWh Price	<u>B</u> udget	Loa	n <u> </u>	<u>0</u> &M	Infl. et	tc. <u>T</u> axation <u>D</u> esc	ription		Next
No	Entry type	D 1	D 2	D 3	I	Year	Budget entry text	Cost/WTG [1000 US\$]:	Cost of 50 WTGs [1000 US\$]	k
1	Investment	X			×	0	WTG_price	5.000	250.000	
2	Investment	X				0	Foundation	150	7.500	<u>C</u> ancel
3	Investment	X				0	Road ao.	50	2.500	
4	Investment	X				0	Electric Works	300	15.000	
5	Investment	X				0	Project develop.	100	5.000	
6	Prepayed O&M					5	Insurance, prepay f	100	5.000	Simple
	Investment					0	Diverse, no depreci	0	9.975	Ompie
r						L	Diverse, no depres			
-					L					<u>S</u> ave templa
In	istallation costs:	294.5	975	1000	L	L				Save templa
In		294.3	975	1000 US\$	L	Ad	justing entry :			<u>S</u> ave templa
In C	istallation costs:	294.3	975	1000 US\$	L	Ad				<u>S</u> ave templa

A simple budget can be entered, or you can activate the "Advanced/Simple" button to get access to a detailed description of each budget line (see the above figure). The following items can be specified:

#### Entry type:

- Ø Investment normal
- Prepaid O/M e.g. Service and Insurance for five years (which is included in the budget, but treated as O/M costs) filled in combination with the "Year" column!
- Ø Automatically calculated Insurance An AUTO- Insurance calculator can be loaded (see below).

For each entry type, different properties are available:

- D: Depreciations: 3 different depreciation methods can be chosen. These can be defined at the "taxation" tab, where different percentages etc. can be chosen.
- I: Insurance: specifies whether or not the component shall appear in the insurance calculator

**Adjusting Entry**: One of the budget components can be chosen as an "adjusting entry" item. This makes it easy to get a nice round figure for the total budget price.

	ation of insuran		a indiana. A	ter traffition in			10.1.1.1.1
711 f	prices and pr	oductions apply	to 1 WT(	G. Prices are s	tated in US\$		
lam	ne:						
Nc	Туре	Text		Percent	Basis		Amount
1							
•	% of amount	WTG_price		1,0000	5.000.000	=	50.000
3	% of amount	Foundation		2,0000	150.000	=	3.000
ota	l insurance:	53 000			Promium couver		a ware
ōta	Il insurance:	53.000		F	Premium covers	3:	3 years
	1	53.000 Delete		F	Premium covers	3:	3 years

## Any budget entry marked under "I" under "Advanced" will appear, and can be multiplied with entered multipliers. It is not unusual to calculate insurance amounts in this way.

### 6.2.5.1 Insurance Calculator

#### 6.2.6 Loan

1	dit input for economy calcul	ation	di tina tara in	Rod Trapilitation	See Saran	-		
<u>S</u> e	tup   <u>P</u> roject   <u>k</u> Wh Price	Budget	<u>L</u> oan <u>O</u> &M	Infl. etc.	axation Des	cription		Next
Т	otal investment : 294.975 [1	1000 US\$]						
								<u>k</u>
Т	be financed as follows	:						<u>C</u> ancel
Γ	Type of loan	Share [%]	Amount [1000 US\$]	Term [year]	Terms per year	Annual interest rate [%]	No repayment terms	
	Annuity	60	176.985	10	1	4	0	
	Cash credit	40	117.990			5	0	Simple
C In In	Add Delete ash payment: ash balance terests on negative cash ba terests on positive cash ba	0 10 alance   lance	00 US\$ (payn 5,00 % 2,00 %	nent which doe nent which yiel		iterests)		<u>S</u> ave template

For a non-coop project only this type of loan can be selected. For coops project, this loan means that it is taken individual by each coop.

The following types of loan can be selected:

- Annuity (constant annual payment =(repayment + interest))
- Series (constant annual repayment)
- Index series (inflation adjusted principal)
- Cash Credit (repayment will automatically be calculated as the total profit each year).

Under 'Cash Credit' no Term shall be entered - it will be calculated automatically and 'Terms per year' will automatically be 1.

'Cash Payment' can be calculated with or without an Interest Calculation.

You can enter Interest Rates on as well negative as positive Cash Balances. A Cooperative Cash Balance is always positive or equal to zero.

#### 6.2.6.1 Loan by Coops (common loan for coops)

If the project type is a Coop, there can be specified loans granted to the Cooperative as collective loan, and not to the individual member of the Coop.

The input form for the loan follows the structure given previous, see input form below.

Edit cooperative loan	1					×
Cooperative loans a	re obtained	by the coop	erative			Ok
Total investment: 294.	975 <mark>[1000 US</mark>	\$\$].				Cancel
To be financed as fo	ollows:					]
Type of loan	Share [%]	Amount [1000 US\$]	Term [years]	Terms per year	Annual interest rate [%]	
Serial	10	29.498	10	1	5	
	lete					
Cash payment by sha			000 US\$			
Value of tax credit	is used to rec	luce debt				

#### 6.2.7 O&M (Operation and Maintenance)

		idget <u>L</u> oan <u>O</u> &M <u>I</u> nfl. etc		on Description			Next
€.	amounts are indicated in net 1 WTG	present values and applies for: C 50	: 0 WTGs				
١o	O&M costs (type)	Annual O&M expenditures	From	[US\$]/[%]	From	[US\$]/[%]	<u></u> k
		Text	year		year		<u>C</u> ancel
1 /	Annual amount	Insurence	6	20000	0	0	
2	cent/kWh	Service and repair	2	1	10	1,5	
► I	US\$/kW	Administration and land rent	0	8	0	0	
							Advanced
A	Add O&M costs Delete O&	M costs Add transfer	Delete	e transfer			Save templa
A No	Add O&M costs Delete O&		d in Tran	e transfer sference m year			Save templat
10		I Amount To be use	d in Tran	sference			Save templat
10	Transferences to overhau	I Amount To be use [US\$] year	d in Tran	sference m year			<u>Save templat</u>
10	Transferences to overhau	I Amount To be use [US\$] year	d in Tran	sference m year			Save templat

There can be specified 2 periods with different O&M costs.

O&M can be specified as several different components, where each and all of the components can be listed as:

- Ø Annual amount
- % of investment (project costs)
- Ø % of Electricity sale (annual income)
- Ø Costs in specified Currency/kWh e.g. 0.01 US\$ pr. kWh produced electricity
- Ø Costs in specified Currency/kW as the above item, but pr. installed capacity
- Ø Annual amount, no inflation as first item, but not inflated

Transferences to overhaul - major investments will have to be expected during the lifetime of the wind turbine - e.g. new Gear box after 12 years, which will be saved during year 5-12 in example above.

#### 6.2.8 Inflation, etc.

We Edit input for economy calculation	
Setup Project KWh Price Budget Loan O&M Infl. etc. Taxation Description	Next
Inflation:2,0%Inflation regulation begins : 1. January this year :1=VAT25,0%	<u>k</u>
For calculation of the socio-economic electricity price Socio-economic calculation interest rate 5,0 %	Cancel
For calculation of net present value	
Interest rate 6,0 %	
Interest rate is the expected lending rate + additional charge for the time delay in repayment + risk	Advanced
	<u>S</u> ave template

The VAT taxation amount will not affect the results in this version of WINDBANK - all amounts are assumed to be excl. VAT.

For a socio economic evaluation of project, the price per produced kWh can be calculated. For this a socioeconomic calculation interest rate must be used. This is normally given by the government. The value is decided based on a combined evaluation of the interest level and the risk by the type of technology. The Government can based on the cost/kWh seen in a long term perspective tell which technology is cheapest to use for electricity production.

For net present value calculation, similar can be given a interest rate, where it is the investor who decides the interest rate based on expected risk etc.

#### 6.2.9 Taxation

W Edit input for economy calculation	
Setup   Project   KWh Price   Budget   Loan   Q&M   Infl. etc. Iaxation   Description	Next
Tax conditions Annual values	
Tax on operation and depreciation 25 %  Edit	<u>O</u> k
Tax on interests 25 % Edit	<u>C</u> ancel
Book depreciation pertaining to accounts         © Linear over       20 years         © Entered amount       Edit         Fiscal depreciation       Entered amount	Advanced
Maximum annual depreciation:       15 %         Maximum annual depreciation percentage:       1 C 2 C 3         Entered annual percentage       Edit         Maximum annual depreciation amounts entered       Edit         Entered annual depreciation amounts entered       Edit         Entered annual depreciation amounts entered       Edit         Entered annual tax payment       Edit	Save template

The Tax item can be divided into taxation concerning Operation & Depreciation and Interests. In some countries there will be different ways of treating tax savings on interests and on negative profit – if any.

The item 'Book Depreciations' affects the annual 'balance sheet', which is different from the 'annual liquidity' (cash flow). For the balance sheet, the typical way to handle depreciation is linear over the expected lifetime of the project, telling that the value of the project is decreased with a the same amount every year. But regarding tax, it is often allowed to make a faster depreciation. These regulations are made by the governments to give investors an incentive to investments, to make the county develop faster and be more competitive. That's why the "Fiscal Depreciation" can be handled separately, but it might not be useful in all countries.

The item 'Fiscal Depreciation', affects the 'annual liquidity', if the depreciation gives tax savings. The input of the depreciation can be given in several different ways. And there can be defined up to three different sets, which link to the budget lines, where one of the three different sets can be chosen. For the different ways to input, the first two will always work, while the last two only work in combination with the loan type "Cash credit". These work so the repayment on cash credits is adjusted in combination with the depreciation amount, so the fist years always will give a liquidity of zero. In other words, the project is handled so the repayment is as fast as possible, based on the project profit including tax savings due to depreciation. The four different depreciation input methods:

- 1. Maximum percentage: Each year the fiscal depreciation amounts to a given percentage of the project value, which is not written off in the balance sheet.
- 2. Entered annual percentage the annual depreciation percentage can be entered separately for each year by using the 'Edit' bitmap button.

- 3. Maximum annual depreciation amount gives you the possibility of letting the software calculate the annual percentage for depreciation based on the investors' capabilities of exploiting the tax allowances.
- 4. Entered annual income tax payment as the above item, but where the software calculates the depreciation percentage from the tax allowances and income tax percentage.

Which methods and percentages that can be used depends on the local tax regulations, please confirm with an auditor.

#### 6.2.10 Description

Any comments can be entered and will appear on each printed report page.

## 6.3 WINDBANK – Calculation and printouts

#### 6.3.1 Starting calculation

When you activate the bitmap button 'OK' the calculation will start automatically.

After the calculation has been completed the following reports will appear: Below as well an example of coop's owned as private/company owned WTG project are shown. The Coop's calculation produces 2 more reports than the private/company owned.

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8:1	Project Options Feedback Edit Help				_ 뭔 ㅗ
B	Name	Status	State		Create calculation
0	WINDBANK: 5x 1,5 MW WTGs Coop owned		æ	-	<ul> <li>ATLAS (Energy, one position, sim</li> </ul>
	Main Result	1p	0	1	BASIS (Project data)
- 🕄	- Assumptions and ratios	1p	۲		DECIBEL (Noise)
P	<ul> <li>Budgets for liquidity and profit/loss</li> </ul>	1p	۲	-	IMPACT (WTG impact on neighbo)
	<ul> <li>Detailed printout on project</li> </ul>	2p	۲	-	🖣 METEO (Energy, one position, me
١	<ul> <li>Detailed printout on cooperative</li> </ul>	2p	۲	-	OPTIMIZE (Energy optimization of
0	Detailed printout on interested party	2p	۲	-	PARK (Energy, Wind Farm(ATLAS)
2	Graphs	1p	۲	-	RESOURCE (Energy, resource m
	🗄 WINDBANK: Private_1,5 MW WTG			-	SHADOW (Flickering)
	Main Result	1p	۲		STATGEN (Generate Wind Statist
8	Assumptions and ratios	1p	۲	-	UMBRA (Landschaftsästhetische
	Budgets for liquidity and profit/loss	1p	۲		VISUAL (Photo montage)
	<ul> <li>Detailed listing of economic figures</li> </ul>	2p	۲		WAsP interface (Energy, one posi
8	Graphs	1p	۲		WINDBANK (WTG economics)
					WINDSIM (Generate datafile for W
					ZVI (Zones of visual influence)
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The Printouts can be activated for preview purposes by double clicking on the report name. You can also mark a report and click on the printer symbol. For a printout of all the reports, right click on the main heading.

#### 6.3.2 Printouts

The printouts are divided into 5 different report types:

- Ø Main result, with main figures (budget, financing and result).
- Ø Assumptions and Ratios, with more detailed assumptions and some key figures.
- Ø Budgets for liquidity and profit/loss estimates. Time Series with main figures (Cash Flow).
- Ø Detailed financial statement for the "project" with Time Series of all the calculated values.
- Ø Graphs graphic presentation of most of the important time series.

For Coop's 2 more printouts will appear:

- **Ø** Detailed financial statement for the Cooperative including how the economy for the Cooperative will interact with the Coop Members.
- Ø Detailed financial statement for the individual Coop Member (the interested party)

The printouts should be fairly self-explanatory - if not, don't hesitate to call at EMD.

But in order for you to understand the basic concepts of the economic figures, an overview of the main budget is given in part 6.1.