

## The FREQ Procedure

File identifier

fileid	Frequency	Percent	Cumulative Frequency	Cumulative Percent
chap05	35700	100.00	35700	100.00

## The FREQ Procedure

## Table of scenario by year

scenario(Scenario)      year(Year)

Frequency Percent	2040	Total
BC1:000N- S- T- F- R	985 2.76	985 2.76
BC1:000N- S- T-N F- R	460 1.29	460 1.29
BC1:000N- S- T-Y F- R	460 1.29	460 1.29
BC1:020N- S- T- F- R	985 2.76	985 2.76
BC1:020N- S- T-N F- R	235 0.66	235 0.66
BC1:020N- S- T-Y F- R	235 0.66	235 0.66
BC1:030N- S- T-N F- R	225 0.63	225 0.63
BC1:030N- S- T-Y F- R	225 0.63	225 0.63
BC1:060N- S- T- F- R	985 2.76	985 2.76
BC1:060N- S- T-N F- R	235 0.66	235 0.66
BC1:060N- S- T-Y F- R	235 0.66	235 0.66
BC1:060N-1S-CT- F-00R	555 1.55	555 1.55
BC1:060N-1S-CT- F-80R	555 1.55	555 1.55
Total	35700 100.00	35700 100.00

(Continued)

## The FREQ Procedure

## Table of scenario by year

scenario(Scenario)	year(Year)	
Frequency Percent	2040	Total
BC1:060N-1S-NT- F-00R	555 1.55	555 1.55
BC1:060N-1S-NT- F-80R	555 1.55	555 1.55
BC1:060N-2S-CT- F-00R	555 1.55	555 1.55
BC1:060N-2S-CT- F-80R	555 1.55	555 1.55
BC1:060N-2S-NT- F-00R	555 1.55	555 1.55
BC1:060N-2S-NT- F-80R	555 1.55	555 1.55
BC1:070N- S- T-N F- R	225 0.63	225 0.63
BC1:070N- S- T-Y F- R	225 0.63	225 0.63
BC1:085N-1S-CT- F-00R	555 1.55	555 1.55
BC1:085N-1S-CT- F-80R	555 1.55	555 1.55
BC1:085N-1S-NT- F-00R	555 1.55	555 1.55
BC1:085N-1S-NT- F-80R	555 1.55	555 1.55
BC1:085N-2S-CT- F-00R	555 1.55	555 1.55
Total	35700 100.00	35700 100.00
(Continued)		

## The FREQ Procedure

Table of scenario by year

scenario(Scenario)	year(Year)	
Frequency Percent	2040	Total
BC1:085N-2S-CT- F-80R	555 1.55	555 1.55
BC1:085N-2S-NT- F-00R	555 1.55	555 1.55
BC1:085N-2S-NT- F-80R	555 1.55	555 1.55
BC1:100N- S- T- F- R	985 2.76	985 2.76
BC1:100N- S- T-N F- R	235 0.66	235 0.66
BC1:100N- S- T-Y F- R	235 0.66	235 0.66
BC1:101N-1S-CT- F- R	120 0.34	120 0.34
BC1:101N-1S-NT- F- R	120 0.34	120 0.34
BC1:101N-2S-CT- F- R	120 0.34	120 0.34
BC1:101N-2S-NT- F- R	120 0.34	120 0.34
BC1:105N-1S-CT- F-00R	515 1.44	515 1.44
BC1:105N-1S-CT- F-80R	515 1.44	515 1.44
BC1:105N-1S-NT- F-00R	515 1.44	515 1.44
Total	35700 100.00	35700 100.00
(Continued)		

## The FREQ Procedure

## Table of scenario by year

scenario(Scenario)	year(Year)	
Frequency Percent	2040	Total
BC1:105N-1S-NT- F-80R	515 1.44	515 1.44
BC1:105N-2S-CT- F-00R	515 1.44	515 1.44
BC1:105N-2S-CT- F-80R	515 1.44	515 1.44
BC1:105N-2S-NT- F-00R	515 1.44	515 1.44
BC1:105N-2S-NT- F-80R	515 1.44	515 1.44
BC1:110N- S- T-N F- R	225 0.63	225 0.63
BC1:110N- S- T-Y F- R	225 0.63	225 0.63
BC1:110N-1S-CT- F-00R	555 1.55	555 1.55
BC1:110N-1S-CT- F-80R	555 1.55	555 1.55
BC1:110N-1S-NT- F-00R	555 1.55	555 1.55
BC1:110N-1S-NT- F-80R	555 1.55	555 1.55
BC1:110N-2S-CT- F-00R	555 1.55	555 1.55
BC1:110N-2S-CT- F-80R	555 1.55	555 1.55
Total	35700 100.00	35700 100.00
(Continued)		

## The FREQ Procedure

## Table of scenario by year

scenario(Scenario)	year(Year)	
Frequency Percent	2040	Total
BC1:110N-2S-NT- F-00R	555 1.55	555 1.55
BC1:110N-2S-NT- F-80R	555 1.55	555 1.55
BC1:120N-1S-CT- F-00R	515 1.44	515 1.44
BC1:120N-1S-CT- F-80R	515 1.44	515 1.44
BC1:120N-1S-NT- F-00R	515 1.44	515 1.44
BC1:120N-1S-NT- F-80R	515 1.44	515 1.44
BC1:120N-2S-CT- F-00R	515 1.44	515 1.44
BC1:120N-2S-CT- F-80R	515 1.44	515 1.44
BC1:120N-2S-NT- F-00R	515 1.44	515 1.44
BC1:120N-2S-NT- F-80R	515 1.44	515 1.44
BC1:135N-1S-CT- F- R	120 0.34	120 0.34
BC1:135N-1S-CT- F-00R	515 1.44	515 1.44
BC1:135N-1S-CT- F-80R	515 1.44	515 1.44
Total	35700 100.00	35700 100.00
(Continued)		

## The FREQ Procedure

Table of scenario by year

scenario(Scenario)	year(Year)	
Frequency Percent	2040	Total
BC1:135N-1S-NT- F- R	120 0.34	120 0.34
BC1:135N-1S-NT- F-00R	515 1.44	515 1.44
BC1:135N-1S-NT- F-80R	515 1.44	515 1.44
BC1:135N-2S-CT- F- R	120 0.34	120 0.34
BC1:135N-2S-CT- F-00R	515 1.44	515 1.44
BC1:135N-2S-CT- F-80R	515 1.44	515 1.44
BC1:135N-2S-NT- F- R	120 0.34	120 0.34
BC1:135N-2S-NT- F-00R	515 1.44	515 1.44
BC1:135N-2S-NT- F-80R	515 1.44	515 1.44
BC1:168N-1S-CT- F- R	120 0.34	120 0.34
BC1:168N-1S-NT- F- R	120 0.34	120 0.34
BC1:168N-2S-CT- F- R	120 0.34	120 0.34
BC1:168N-2S-NT- F- R	120 0.34	120 0.34
Total	35700 100.00	35700 100.00
(Continued)		

## The FREQ Procedure

Table of scenario by year

scenario(Scenario)	year(Year)	
Frequency Percent	2040	Total
BC1:202N-1S-CT- F- R	120 0.34	120 0.34
BC1:202N-1S-NT- F- R	120 0.34	120 0.34
BC1:202N-2S-CT- F- R	120 0.34	120 0.34
BC1:202N-2S-NT- F- R	120 0.34	120 0.34
BC1:235N-1S-CT- F- R	120 0.34	120 0.34
BC1:235N-1S-NT- F- R	120 0.34	120 0.34
BC1:235N-2S-CT- F- R	120 0.34	120 0.34
BC1:235N-2S-NT- F- R	120 0.34	120 0.34
Total	35700 100.00	35700 100.00



## The FREQ Procedure

## Table of feedstock by srce

```
feedstock(Feedstock)
srce(Source)
```

Frequency Percent	Prod	Total
Biomass sorghum	2400 6.72	2400 6.72
Coppice wood, willow	1800 5.04	1800 5.04
Corn stover	13320 37.31	13320 37.31
Miscanthus	1900 5.32	1900 5.32
Noncoppice wood, poplar	1880 5.27	1880 5.27
Sorghum stubble	12360 34.62	12360 34.62
Switchgrass	2040 5.71	2040 5.71
Total	35700 100.00	35700 100.00

## Table of feedstock by indicator

Frequency Percent	N03	TP	TSS	area	qnty	Total
Biomass sorghum	480 1.34	480 1.34	480 1.34	480 1.34	480 1.34	2400 6.72
Coppice wood, wi llow	360 1.01	360 1.01	360 1.01	360 1.01	360 1.01	1800 5.04
Corn stover	2664 7.46	2664 7.46	2664 7.46	2664 7.46	2664 7.46	13320 37.31
Miscanthus	380 1.06	380 1.06	380 1.06	380 1.06	380 1.06	1900 5.32
Noncoppice wood, poplar	376 1.05	376 1.05	376 1.05	376 1.05	376 1.05	1880 5.27
Sorghum stubble	2472 6.92	2472 6.92	2472 6.92	2472 6.92	2472 6.92	12360 34.62
Switchgrass	408 1.14	408 1.14	408 1.14	408 1.14	408 1.14	2040 5.71
Total	7140 20.00	7140 20.00	7140 20.00	7140 20.00	7140 20.00	35700 100.00

## The FREQ Procedure

Table of indicator by units

indicator(Indicator)      units(Units)

Frequency Percent	Mt	ha	kg	Total
N03	0 0.00	0 0.00	7140 20.00	7140 20.00
TP	0 0.00	0 0.00	7140 20.00	7140 20.00
TSS	7140 20.00	0 0.00	0 0.00	7140 20.00
area	0 0.00	7140 20.00	0 0.00	7140 20.00
qnty	7140 20.00	0 0.00	0 0.00	7140 20.00
Total	14280 40.00	7140 20.00	14280 40.00	35700 100.00

## The FREQ Procedure

## Table of feedstock by year

```
feedstock(Feedstock)
      year(Year)
```

Frequency Percent	2040	Total
Biomass sorghum	2400 6.72	2400 6.72
Coppice wood, willow	1800 5.04	1800 5.04
Corn stover	13320 37.31	13320 37.31
Miscanthus	1900 5.32	1900 5.32
Noncoppice wood, poplar	1880 5.27	1880 5.27
Sorghum stubble	12360 34.62	12360 34.62
Switchgrass	2040 5.71	2040 5.71
Total	35700 100.00	35700 100.00

s			f	i					
c			e	n					
e			e	d					
n			s	i	u	-	-	-	-
a	y	s	t	c	a	n	o	m	m
r	e	r	o	t	i	b	i	i	a
i	a	c	c	o	t	s	s	n	x
o	r	e	k	r	s	-	-	-	-

BC1:000N- S- T- F- R 2040 Prod Miscanthus	N03	kg	95	0	0.000	3238.23	158.45
	TP	kg	95	0	0.000	301453.38	20888.55
	TSS	Mt	95	0	0.000	217947.01	15583.92
	area	ha	95	0	144.749	747710.64	138873.38
	qnty	Mt	95	0	0.000	197392.54	28554.45

BC1:000N- S- T- F- R 2040 Prod Switchgrass	N03	kg	102	0	0.000	2780.67	232.41
	TP	kg	102	0	0.000	268622.97	27930.87
	TSS	Mt	102	0	0.000	324188.22	26784.18
	area	ha	102	0	51.850	1039641.39	151117.94
	qnty	Mt	102	0	0.000	111689.49	11501.07

BC1:000N- S- T-NF- R 2040 Prod Coppice wood, willow	N03	kg	45	0	0.001	6582.89	558.10
	TP	kg	45	0	0.000	75197.27	8124.34
	TSS	Mt	45	0	0.000	114058.21	8705.04
	area	ha	45	0	7.201	792802.05	112622.63
	qnty	Mt	45	0	0.000	71483.20	11174.97

BC1:000N- S- T-NF- R 2040 Prod Noncoppice wood, poplar	N03	kg	47	0	0.000	85.31	16.79
	TP	kg	47	0	0.001	2445.63	393.89
	TSS	Mt	47	0	0.000	7205.14	674.78
	area	ha	47	0	3.601	105179.61	12686.45
	qnty	Mt	47	0	0.344	22833.76	2411.10

BC1:000N- S- T-YF- R 2040 Prod Coppice wood, willow	N03	kg	45	0	0.001	5355.73	379.70
	TP	kg	45	0	0.000	34746.77	3219.85
	TSS	Mt	45	0	0.000	65286.44	3714.53
	area	ha	45	0	7.201	792802.05	112622.63
	qnty	Mt	45	0	0.000	71483.20	11174.97

s			f	i						
c			e	n						
e			e	d						
n			s	i						
a	y	s	t	c	u	-	-	-	-	-
r	e	r	o	a	n	o	m	m	m	a
i	a	c	c	t	i	b	i	i	a	v
o	r	e	k	o	t	s	s	n	x	g
				r	s	-	-	-	-	-

BC1:000N-	S-	T-YF-	R	2040	Prod	Noncoppice wood, poplar	N03	kg	47	0	0.000	41.72	7.85
							TP	kg	47	0	0.000	979.11	153.68
							TSS	Mt	47	0	0.000	7677.40	446.94
							area	ha	47	0	3.601	105179.61	12686.45
							qnty	Mt	47	0	0.055	4140.57	426.12

BC1:020N-	S-	T- F-	R	2040	Prod	Miscanthus	N03	kg	95	0	0.000	9816.33	720.39
							TP	kg	95	0	0.000	39742.05	4196.78
							TSS	Mt	95	0	0.000	11639.57	1271.13
							area	ha	95	0	144.749	747710.64	138873.38
							qnty	Mt	95	0	0.000	738750.14	133798.33

BC1:020N-	S-	T- F-	R	2040	Prod	Switchgrass	N03	kg	102	0	0.001	9208.06	853.11
							TP	kg	102	0	0.000	38821.47	4500.19
							TSS	Mt	102	0	0.000	19794.21	1393.12
							area	ha	102	0	51.850	1039641.39	151117.94
							qnty	Mt	102	0	0.000	903017.48	100458.08

BC1:020N-	S-	T-NF-	R	2040	Prod	Noncoppice wood, poplar	N03	kg	47	0	0.000	186.74	42.01
							TP	kg	47	0	0.001	2471.39	400.40
							TSS	Mt	47	0	0.000	5247.48	568.10
							area	ha	47	0	3.601	105179.61	12686.45
							qnty	Mt	47	0	1.123	31436.46	3752.29

BC1:020N-	S-	T-YF-	R	2040	Prod	Noncoppice wood, poplar	N03	kg	47	0	0.000	83.92	14.85
							TP	kg	47	0	0.000	961.49	143.12
							TSS	Mt	47	0	0.000	4962.52	321.56
							area	ha	47	0	3.601	105179.61	12686.45
							qnty	Mt	47	0	0.447	8901.13	1121.31

s			f	i					
c			e	n					
e			d	i					
n			s	c	u	-	-	-	-
a	y	s	t	a	n	o	m	m	a
r	e	r	o	t	i	b	i	i	v
i	a	c	c	o	t	s	s	n	g
o	r	e	k	r	s	-	-	-	-

BC1:030N-	S-	T-NF-	R 2040 Prod Coppice wood, willow	N03	kg	45	0	0.019	27714.69	2556.99
				TP	kg	45	0	0.000	70871.72	6415.70
				TSS	Mt	45	0	0.000	48512.33	4058.16
				area	ha	45	0	7.201	792802.05	112622.63
				qnty	Mt	45	0	0.000	274688.46	33921.03

BC1:030N-	S-	T-YF-	R 2040 Prod Coppice wood, willow	N03	kg	45	0	0.019	17044.47	1578.20
				TP	kg	45	0	0.000	32153.95	2407.61
				TSS	Mt	45	0	0.000	21482.27	1297.80
				area	ha	45	0	7.201	792802.05	112622.63
				qnty	Mt	45	0	0.000	274688.46	33921.03

BC1:060N-	S-	T- F-	R 2040 Prod Miscanthus	N03	kg	95	0	0.031	70959.00	4396.69
				TP	kg	95	0	0.000	32386.14	3729.04
				TSS	Mt	95	0	0.000	7266.34	868.12
				area	ha	95	0	144.749	747710.64	138873.38
				qnty	Mt	95	0	0.000	1907915.04	357590.38

BC1:060N-	S-	T- F-	R 2040 Prod Switchgrass	N03	kg	102	0	0.043	50781.17	3302.08
				TP	kg	102	0	0.000	39858.70	3990.76
				TSS	Mt	102	0	0.000	19330.85	1194.40
				area	ha	102	0	51.850	1039641.39	151117.94
				qnty	Mt	102	0	0.000	1665432.93	189204.14

BC1:060N-	S-	T-NF-	R 2040 Prod Noncoppice wood, poplar	N03	kg	47	0	0.001	537.17	119.09
				TP	kg	47	0	0.001	3003.53	449.32
				TSS	Mt	47	0	0.000	4599.19	602.44
				area	ha	47	0	3.601	105179.61	12686.45
				qnty	Mt	47	0	1.723	34732.89	4403.32

s			f	i						
c			e	n						
e			e	d						
n			d	i						
a	y	s	s	c	u	-	-	-	-	-
r	e	r	t	a	n	o	m	m	m	a
i	a	c	o	t	i	b	i	i	a	v
o	r	e	c	o	t	s	s	n	x	g
			k	r	s	-	-	-	-	-

BC1:060N- S- T-YF- R 2040 Prod Noncoppice wood, poplar	N03	kg	47	0	0.000	334.97	60.10
	TP	kg	47	0	0.000	965.76	144.17
	TSS	Mt	47	0	0.000	4603.87	295.52
	area	ha	47	0	3.601	105179.61	12686.45
	qnty	Mt	47	0	0.587	14271.61	1750.10

BC1:060N-1S-CT- F-00R 2040 Prod Corn stover	N03	kg	111	0	1.187	70900.23	3703.29
	TP	kg	111	0	0.293	1179774.37	53389.55
	TSS	Mt	111	0	0.061	3051350.95	93169.98
	area	ha	111	0	37.627	5771759.87	420960.21
	qnty	Mt	111	0	0.000	555354.90	35799.97

BC1:060N-1S-CT- F-80R 2040 Prod Corn stover	N03	kg	111	0	0.964	43596.39	2216.30
	TP	kg	111	0	0.291	1152712.06	53335.08
	TSS	Mt	111	0	0.072	3421317.82	105421.02
	area	ha	111	0	37.627	5771759.87	420960.21
	qnty	Mt	111	0	0.000	697656.65	39065.46

BC1:060N-1S-NT- F-00R 2040 Prod Corn stover	N03	kg	111	0	1.184	68745.31	3626.41
	TP	kg	111	0	0.347	783882.20	43618.53
	TSS	Mt	111	0	0.061	3009524.06	92167.78
	area	ha	111	0	37.627	5771759.87	420960.21
	qnty	Mt	111	0	0.000	555232.57	35728.50

BC1:060N-1S-NT- F-80R 2040 Prod Corn stover	N03	kg	111	0	0.963	42579.50	2156.27
	TP	kg	111	0	0.316	713383.41	40772.69
	TSS	Mt	111	0	0.071	3394794.55	104813.56
	area	ha	111	0	37.627	5771759.87	420960.21
	qnty	Mt	111	0	0.000	697542.76	38997.66



s c e n a r i o	y e a r	s e r v e	f e e d s t o c k	i n d i c a t o r	u n i t s	-	-	-	-	-	-
BC1:060N-2S-CT- F-00R 2040 Prod Corn stover				N03	kg	111	0	1.296	71531.44	3744.59	
				TP	kg	111	0	0.293	1167668.72	53361.81	
				TSS	Mt	111	0	0.061	3012774.71	92836.21	
				area	ha	111	0	37.627	5771759.87	420960.21	
				qnty	Mt	111	0	0.000	555354.90	35799.86	
BC1:060N-2S-CT- F-80R 2040 Prod Corn stover				N03	kg	111	0	0.971	43803.62	2237.96	
				TP	kg	111	0	0.291	1142349.37	53309.08	
				TSS	Mt	111	0	0.072	3379786.16	105051.50	
				area	ha	111	0	37.627	5771759.87	420960.21	
				qnty	Mt	111	0	0.000	697656.65	39063.70	
BC1:060N-2S-NT- F-00R 2040 Prod Corn stover				N03	kg	111	0	1.293	69417.01	3668.21	
				TP	kg	111	0	0.347	779190.00	43620.83	
				TSS	Mt	111	0	0.061	2971676.27	91837.72	
				area	ha	111	0	37.627	5771759.87	420960.21	
				qnty	Mt	111	0	0.000	555232.57	35726.07	
BC1:060N-2S-NT- F-80R 2040 Prod Corn stover				N03	kg	111	0	0.973	42843.89	2178.33	
				TP	kg	111	0	0.316	709953.86	40772.67	
				TSS	Mt	111	0	0.071	3353655.84	104446.48	
				area	ha	111	0	37.627	5771759.87	420960.21	
				qnty	Mt	111	0	0.000	697542.76	38993.74	
BC1:070N- S- T-NF- R 2040 Prod Coppice wood, willow				N03	kg	45	0	0.036	61213.07	6286.13	
				TP	kg	45	0	0.000	78249.52	6818.31	
				TSS	Mt	45	0	0.000	38382.25	3393.06	
				area	ha	45	0	7.201	792802.05	112622.63	
				qnty	Mt	45	0	0.000	366104.27	44288.74	

										f e e d s t o c k										i n d i c a t o r s									
										y s e r c e										u n o m m m a v g									
BC1:070N- S- T-YF- R 2040 Prod Coppice wood, willow										N03	kg	45	0	0.036	43608.19	4016.96													
										TP	kg	45	0	0.000	35033.06	2545.53													
										TSS	Mt	45	0	0.000	15143.82	984.13													
										area	ha	45	0	7.201	792802.05	112622.63													
										qnty	Mt	45	0	0.000	366104.27	44288.74													
BC1:085N-1S-CT- F-00R 2040 Prod Corn stover										N03	kg	111	0	1.626	96992.66	5059.85													
										TP	kg	111	0	0.297	1184898.26	53957.33													
										TSS	Mt	111	0	0.063	3082571.47	94510.30													
										area	ha	111	0	37.627	5771759.87	420960.21													
										qnty	Mt	111	0	0.000	567686.84	36856.83													
BC1:085N-1S-CT- F-80R 2040 Prod Corn stover										N03	kg	111	0	1.305	60746.31	3189.20													
										TP	kg	111	0	0.290	1146547.06	53269.26													
										TSS	Mt	111	0	0.073	3413041.76	105584.04													
										area	ha	111	0	37.627	5771759.87	420960.21													
										qnty	Mt	111	0	0.000	723647.99	40435.60													
BC1:085N-1S-NT- F-00R 2040 Prod Corn stover										N03	kg	111	0	1.630	93503.69	4943.26													
										TP	kg	111	0	0.354	789725.03	44186.99													
										TSS	Mt	111	0	0.063	3047710.79	93676.44													
										area	ha	111	0	37.627	5771759.87	420960.21													
										qnty	Mt	111	0	0.000	567564.82	36767.27													
BC1:085N-1S-NT- F-80R 2040 Prod Corn stover										N03	kg	111	0	1.306	58068.03	3102.63													
										TP	kg	111	0	0.315	710488.76	40754.83													
										TSS	Mt	111	0	0.073	3389429.46	105088.79													
										area	ha	111	0	37.627	5771759.87	420960.21													
										qnty	Mt	111	0	0.000	723561.00	40365.62													

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BC1:085N-2S-CT- F-00R 2040 Prod Corn stover

N03 kg 111 0 1.626 98419.65 5125.38  
TP kg 111 0 0.297 1173350.54 53939.74  
TSS Mt 111 0 0.063 3045941.06 94205.79  
area ha 111 0 37.627 5771759.87 420960.21  
qnty Mt 111 0 0.000 567686.84 36858.76

BC1:085N-2S-CT- F-80R 2040 Prod Corn stover

N03 kg 111 0 1.305 61287.00 3226.95  
TP kg 111 0 0.290 1136528.96 53249.80  
TSS Mt 111 0 0.073 3372365.62 105230.16  
area ha 111 0 37.627 5771759.87 420960.21  
qnty Mt 111 0 0.000 723647.99 40435.13

BC1:085N-2S-NT- F-00R 2040 Prod Corn stover

N03 kg 111 0 1.630 94715.68 5007.96  
TP kg 111 0 0.354 785315.77 44189.20  
TSS Mt 111 0 0.063 3011941.56 93376.56  
area ha 111 0 37.627 5771759.87 420960.21  
qnty Mt 111 0 0.000 567564.82 36766.56

BC1:085N-2S-NT- F-80R 2040 Prod Corn stover

N03 kg 111 0 1.306 58967.31 3144.14  
TP kg 111 0 0.315 707065.07 40755.55  
TSS Mt 111 0 0.073 3349123.88 104737.05  
area ha 111 0 37.627 5771759.87 420960.21  
qnty Mt 111 0 0.000 723561.00 40363.30

BC1:100N- S- T- F- R 2040 Prod Miscanthus

N03 kg 95 0 0.306 153910.85 11261.81  
TP kg 95 0 0.000 40002.52 4326.01  
TSS Mt 95 0 0.000 8790.00 937.27  
area ha 95 0 144.749 747710.64 138873.38  
qnty Mt 95 0 0.000 2723540.84 508419.73

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r	e	r	o	t	i	b	i	i	v
i	a	c	c	o	t	s	s	n	g
o	r	e	k	r	s	-	-	-	-

BC1:100N- S- T- F- R 2040 Prod Switchgrass	N03	kg	102	0	0.150	156075.69	8651.33
	TP	kg	102	0	0.000	40817.17	4149.28
	TSS	Mt	102	0	0.000	18725.42	1189.12
	area	ha	102	0	51.850	1039641.39	151117.94
	qnty	Mt	102	0	0.000	2090927.81	239182.48
BC1:100N- S- T-NF- R 2040 Prod Noncoppice wood, poplar	N03	kg	47	0	0.003	1257.10	219.03
	TP	kg	47	0	0.001	3122.56	464.51
	TSS	Mt	47	0	0.000	4358.78	614.40
	area	ha	47	0	3.601	105179.61	12686.45
	qnty	Mt	47	0	1.985	36971.52	4576.54
BC1:100N- S- T-YF- R 2040 Prod Noncoppice wood, poplar	N03	kg	47	0	0.001	606.15	111.56
	TP	kg	47	0	0.000	997.37	146.20
	TSS	Mt	47	0	0.000	4307.32	273.40
	area	ha	47	0	3.601	105179.61	12686.45
	qnty	Mt	47	0	0.715	20915.53	2516.42
BC1:101N-1S-CT- F- R 2040 Prod Biomass sorghum	N03	kg	24	0	5.617	16666.30	3317.46
	TP	kg	24	0	76.807	264172.21	47225.53
	TSS	Mt	24	0	42.868	526110.41	97722.58
	area	ha	24	0	116.303	346039.43	61008.83
	qnty	Mt	24	0	27.384	150214.63	25917.16
BC1:101N-1S-NT- F- R 2040 Prod Biomass sorghum	N03	kg	24	0	5.646	16708.67	3328.37
	TP	kg	24	0	71.345	201605.06	35176.95
	TSS	Mt	24	0	43.950	524959.23	97527.85
	area	ha	24	0	116.303	346039.43	61008.83
	qnty	Mt	24	0	27.181	150270.58	25927.94

s c e n a r i o	y e a r	s e r c e	f e e d s t o c k	i n d i c a t o r	u n i t s	-	-	-	-	-	-
BC1:101N-2S-CT- F- R 2040 Prod Biomass sorghum				N03	kg	24	0	5.172	22256.09	3866.85	
				TP	kg	24	0	76.567	263894.53	47129.70	
				TSS	Mt	24	0	42.784	525706.56	97442.89	
				area	ha	24	0	116.303	346039.43	61008.83	
				qnty	Mt	24	0	27.376	150212.51	25916.85	
BC1:101N-2S-NT- F- R 2040 Prod Biomass sorghum				N03	kg	24	0	5.199	22307.33	3879.44	
				TP	kg	24	0	71.107	201476.50	35132.70	
				TSS	Mt	24	0	43.865	524559.09	97248.80	
				area	ha	24	0	116.303	346039.43	61008.83	
				qnty	Mt	24	0	27.174	150268.57	25927.62	
BC1:105N-1S-CT- F-00R 2040 Prod Sorghum stubble				N03	kg	103	0	0.030	10766.78	1072.38	
				TP	kg	103	0	0.007	100724.17	7428.40	
				TSS	Mt	103	0	0.007	134859.38	9664.09	
				area	ha	103	0	1.710	876414.18	149709.04	
				qnty	Mt	103	0	0.000	51782.83	7590.75	
BC1:105N-1S-CT- F-80R 2040 Prod Sorghum stubble				N03	kg	103	0	0.027	10232.33	820.57	
				TP	kg	103	0	0.008	95398.08	7273.35	
				TSS	Mt	103	0	0.008	150029.98	10978.04	
				area	ha	103	0	1.710	876414.18	149709.04	
				qnty	Mt	103	0	0.000	51926.37	7709.37	
BC1:105N-1S-NT- F-00R 2040 Prod Sorghum stubble				N03	kg	103	0	0.030	9394.54	1045.47	
				TP	kg	103	0	0.009	95586.25	7225.13	
				TSS	Mt	103	0	0.007	133626.52	9586.78	
				area	ha	103	0	1.710	876414.18	149709.04	
				qnty	Mt	103	0	0.000	51774.77	7586.03	

					feedstock	industrial	unit	ton	ton	ton	ton	ton	ton
scenario	year	sector	commodity	crop									
BC1:105N-1S-NT-	F-80R	2040	Prod	Sorghum	stubble	N03	kg	103	0	0.028	8923.56	795.49	
						TP	kg	103	0	0.009	79413.26	6319.19	
						TSS	Mt	103	0	0.008	149374.35	10937.14	
						area	ha	103	0	1.710	876414.18	149709.04	
						qnty	Mt	103	0	0.000	51926.80	7704.64	
BC1:105N-2S-CT-	F-00R	2040	Prod	Sorghum	stubble	N03	kg	103	0	0.030	10766.78	1082.91	
						TP	kg	103	0	0.007	100748.01	7427.13	
						TSS	Mt	103	0	0.007	134859.38	9652.57	
						area	ha	103	0	1.710	876414.18	149709.04	
						qnty	Mt	103	0	0.000	51782.83	7590.95	
BC1:105N-2S-CT-	F-80R	2040	Prod	Sorghum	stubble	N03	kg	103	0	0.027	10232.33	829.60	
						TP	kg	103	0	0.008	95418.45	7272.02	
						TSS	Mt	103	0	0.008	150029.98	10965.01	
						area	ha	103	0	1.710	876414.18	149709.04	
						qnty	Mt	103	0	0.000	51926.37	7709.71	
BC1:105N-2S-NT-	F-00R	2040	Prod	Sorghum	stubble	N03	kg	103	0	0.030	9394.54	1055.91	
						TP	kg	103	0	0.009	95603.98	7224.71	
						TSS	Mt	103	0	0.007	133626.52	9575.22	
						area	ha	103	0	1.710	876414.18	149709.04	
						qnty	Mt	103	0	0.000	51774.77	7586.15	
BC1:105N-2S-NT-	F-80R	2040	Prod	Sorghum	stubble	N03	kg	103	0	0.028	8923.56	804.45	
						TP	kg	103	0	0.009	79425.69	6318.71	
						TSS	Mt	103	0	0.008	149374.35	10924.04	
						area	ha	103	0	1.710	876414.18	149709.04	
						qnty	Mt	103	0	0.000	51926.80	7704.91	

s c e n a r i o	y e a r	s e c o n d	f e e d s t o c k	i n d i c a t o r	u n i t s	- o b s	- m i s s	- m i n	- m a x	- a v g
BC1:110N- S- T-NF- R 2040 Prod Coppice wood, willow				N03	kg	45	0	0.052	102644.85	9725.60
				TP	kg	45	0	0.000	79116.83	6881.72
				TSS	Mt	45	0	0.000	36799.59	3276.26
				area	ha	45	0	7.201	792802.05	112622.63
				qnty	Mt	45	0	0.000	393158.82	47036.80
BC1:110N- S- T-YF- R 2040 Prod Coppice wood, willow				N03	kg	45	0	0.052	79399.77	6573.71
				TP	kg	45	0	0.000	35305.06	2565.06
				TSS	Mt	45	0	0.000	14239.41	934.78
				area	ha	45	0	7.201	792802.05	112622.63
				qnty	Mt	45	0	0.000	393158.82	47036.80
BC1:110N-1S-CT- F-00R 2040 Prod Corn stover				N03	kg	111	0	1.896	127893.59	6437.90
				TP	kg	111	0	0.296	1189874.62	54350.85
				TSS	Mt	111	0	0.062	3113526.29	95752.14
				area	ha	111	0	37.627	5771759.87	420960.21
				qnty	Mt	111	0	0.000	575238.20	37698.73
BC1:110N-1S-CT- F-80R 2040 Prod Corn stover				N03	kg	111	0	1.617	77842.53	4282.64
				TP	kg	111	0	0.285	1143862.77	53303.71
				TSS	Mt	111	0	0.072	3417912.55	106153.41
				area	ha	111	0	37.627	5771759.87	420960.21
				qnty	Mt	111	0	0.000	739478.21	41571.11
BC1:110N-1S-NT- F-00R 2040 Prod Corn stover				N03	kg	111	0	1.898	127962.22	6293.08
				TP	kg	111	0	0.359	795832.56	44617.22
				TSS	Mt	111	0	0.062	3083010.15	95045.57
				area	ha	111	0	37.627	5771759.87	420960.21
				qnty	Mt	111	0	0.000	575125.57	37602.10

BC1:110N-1S-NT- F-80R 2040 Prod Corn stover	N03	kg	111	0	1.618	74641.24	4163.50
	TP	kg	111	0	0.314	710067.88	40833.98
	TSS	Mt	111	0	0.072	3397710.10	105730.68
	area	ha	111	0	37.627	5771759.87	420960.21
	qnty	Mt	111	0	0.000	739369.98	41490.33
BC1:110N-2S-CT- F-00R 2040 Prod Corn stover	N03	kg	111	0	1.896	127893.59	6512.79
	TP	kg	111	0	0.296	1178436.21	54332.86
	TSS	Mt	111	0	0.062	3074914.95	95427.94
	area	ha	111	0	37.627	5771759.87	420960.21
	qnty	Mt	111	0	0.000	575238.20	37703.23
BC1:110N-2S-CT- F-80R 2040 Prod Corn stover	N03	kg	111	0	1.617	74194.53	4322.13
	TP	kg	111	0	0.285	1134386.62	53287.39
	TSS	Mt	111	0	0.072	3378316.63	105809.33
	area	ha	111	0	37.627	5771759.87	420960.21
	qnty	Mt	111	0	0.000	739478.21	41572.41
BC1:110N-2S-NT- F-00R 2040 Prod Corn stover	N03	kg	111	0	1.898	127962.22	6360.01
	TP	kg	111	0	0.359	791406.08	44616.83
	TSS	Mt	111	0	0.062	3045034.09	94730.09
	area	ha	111	0	37.627	5771759.87	420960.21
	qnty	Mt	111	0	0.000	575125.57	37600.69
BC1:110N-2S-NT- F-80R 2040 Prod Corn stover	N03	kg	111	0	1.618	71654.34	4208.10
	TP	kg	111	0	0.314	706791.47	40831.48
	TSS	Mt	111	0	0.072	3358516.45	105390.02
	area	ha	111	0	37.627	5771759.87	420960.21
	qnty	Mt	111	0	0.000	739369.98	41489.92



Scenario	Year	Season	Crop	Treatment	Index	Unit		Min	Max	Avg
BC1:120N-1S-CT- F-00R 2040 Prod Sorghum stubble	N03	kg	103	0	0.033			11546.00		1214.11
	TP	kg	103	0	0.007			100698.10		7431.81
	TSS	Mt	103	0	0.007			135016.60		9673.18
	area	ha	103	0	1.710			876414.18		149709.04
	qnty	Mt	103	0	0.000			52226.16		7615.56
BC1:120N-1S-CT- F-80R 2040 Prod Sorghum stubble	N03	kg	103	0	0.030			11022.81		924.66
	TP	kg	103	0	0.008			95218.49		7260.86
	TSS	Mt	103	0	0.008			149792.32		10962.80
	area	ha	103	0	1.710			876414.18		149709.04
	qnty	Mt	103	0	0.000			52158.32		7733.72
BC1:120N-1S-NT- F-00R 2040 Prod Sorghum stubble	N03	kg	103	0	0.033			10070.45		1183.34
	TP	kg	103	0	0.009			95518.52		7231.34
	TSS	Mt	103	0	0.007			133795.41		9596.93
	area	ha	103	0	1.710			876414.18		149709.04
	qnty	Mt	103	0	0.000			52218.13		7610.58
BC1:120N-1S-NT- F-80R 2040 Prod Sorghum stubble	N03	kg	103	0	0.031			9610.69		897.20
	TP	kg	103	0	0.009			79303.85		6312.13
	TSS	Mt	103	0	0.008			149135.21		10921.46
	area	ha	103	0	1.710			876414.18		149709.04
	qnty	Mt	103	0	0.000			52158.07		7728.98
BC1:120N-2S-CT- F-00R 2040 Prod Sorghum stubble	N03	kg	103	0	0.033			11546.00		1226.18
	TP	kg	103	0	0.007			100721.53		7430.58
	TSS	Mt	103	0	0.007			135016.60		9661.72
	area	ha	103	0	1.710			876414.18		149709.04
	qnty	Mt	103	0	0.000			52226.16		7615.80

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c			e	n				
e			e	d				
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i	a	c	o	t	i	b	i	i
o	r	e	c	o	t	s	s	n
			k	r	s	-	-	-

BC1:120N-2S-CT- F-80R 2040 Prod Sorghum stubble

N03	kg	103	0	0.030	11022.81	935.09
TP	kg	103	0	0.008	95237.44	7259.56
TSS	Mt	103	0	0.008	149792.32	10949.86
area	ha	103	0	1.710	876414.18	149709.04
qnty	Mt	103	0	0.000	52158.32	7734.09

BC1:120N-2S-NT- F-00R 2040 Prod Sorghum stubble

N03	kg	103	0	0.033	10070.45	1195.32
TP	kg	103	0	0.009	95536.04	7231.00
TSS	Mt	103	0	0.007	133795.41	9585.45
area	ha	103	0	1.710	876414.18	149709.04
qnty	Mt	103	0	0.000	52218.13	7610.77

BC1:120N-2S-NT- F-80R 2040 Prod Sorghum stubble

N03	kg	103	0	0.031	9610.69	907.65
TP	kg	103	0	0.009	79316.89	6311.66
TSS	Mt	103	0	0.008	149135.21	10908.47
area	ha	103	0	1.710	876414.18	149709.04
qnty	Mt	103	0	0.000	52158.07	7729.23

BC1:135N-1S-CT- F- R 2040 Prod Biomass sorghum

N03	kg	24	0	8.049	26075.10	5230.72
TP	kg	24	0	76.802	264211.31	47226.76
TSS	Mt	24	0	42.866	525948.60	97700.85
area	ha	24	0	116.303	346039.43	61008.83
qnty	Mt	24	0	27.395	150445.01	25963.31

BC1:135N-1S-CT- F-00R 2040 Prod Sorghum stubble

N03	kg	103	0	0.036	12327.81	1362.64
TP	kg	103	0	0.007	101007.85	7442.51
TSS	Mt	103	0	0.007	135730.28	9693.65
area	ha	103	0	1.710	876414.18	149709.04
qnty	Mt	103	0	0.000	52626.95	7638.49

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BC1:135N-1S-CT- F-80R 2040 Prod Sorghum stubble				N03	kg	103	0	0.033	11814.06	1039.96
				TP	kg	103	0	0.008	95062.98	7251.05
				TSS	Mt	103	0	0.008	149608.99	10950.47
				area	ha	103	0	1.710	876414.18	149709.04
				qnty	Mt	103	0	0.000	52437.25	7756.75
BC1:135N-1S-NT- F- R 2040 Prod Biomass sorghum				N03	kg	24	0	8.077	26131.14	5244.64
				TP	kg	24	0	71.344	201685.26	35188.67
				TSS	Mt	24	0	43.948	524793.32	97508.94
				area	ha	24	0	116.303	346039.43	61008.83
				qnty	Mt	24	0	27.190	150496.07	25972.84
BC1:135N-1S-NT- F-00R 2040 Prod Sorghum stubble				N03	kg	103	0	0.036	12281.06	1327.08
				TP	kg	103	0	0.009	95726.44	7243.64
				TSS	Mt	103	0	0.007	134571.82	9619.70
				area	ha	103	0	1.710	876414.18	149709.04
				qnty	Mt	103	0	0.000	52617.16	7633.14
BC1:135N-1S-NT- F-80R 2040 Prod Sorghum stubble				N03	kg	103	0	0.034	10298.18	1010.02
				TP	kg	103	0	0.009	79218.32	6307.62
				TSS	Mt	103	0	0.008	148950.60	10908.56
				area	ha	103	0	1.710	876414.18	149709.04
				qnty	Mt	103	0	0.000	52438.14	7752.04
BC1:135N-2S-CT- F- R 2040 Prod Biomass sorghum				N03	kg	24	0	7.406	35502.41	6260.49
				TP	kg	24	0	76.562	263934.25	47130.94
				TSS	Mt	24	0	42.782	525544.89	97421.24
				area	ha	24	0	116.303	346039.43	61008.83
				qnty	Mt	24	0	27.386	150442.84	25962.86

s			f	i				
c			e	n				
e			e	d				
n			d	i				
a	y	s	s	c	u	-	-	-
r	e	r	t	a	n	-	-	-
i	a	c	o	t	i	b	i	i
o	r	e	c	o	t	s	s	n
			k	r	s	-	-	-

BC1:135N-2S-CT- F-00R 2040 Prod Sorghum stubble

N03	kg	103	0	0.036	12327.81	1376.01
TP	kg	103	0	0.007	101033.31	7441.39
TSS	Mt	103	0	0.007	135730.28	9682.25
area	ha	103	0	1.710	876414.18	149709.04
qnty	Mt	103	0	0.000	52626.95	7638.75

BC1:135N-2S-CT- F-80R 2040 Prod Sorghum stubble

N03	kg	103	0	0.033	11814.06	1051.83
TP	kg	103	0	0.008	95082.74	7249.79
TSS	Mt	103	0	0.008	149608.99	10937.54
area	ha	103	0	1.710	876414.18	149709.04
qnty	Mt	103	0	0.000	52437.25	7757.14

BC1:135N-2S-NT- F- R 2040 Prod Biomass sorghum

N03	kg	24	0	7.433	35571.35	6276.70
TP	kg	24	0	71.106	201555.67	35144.21
TSS	Mt	24	0	43.862	524389.70	97229.79
area	ha	24	0	116.303	346039.43	61008.83
qnty	Mt	24	0	27.182	150494.06	25972.43

BC1:135N-2S-NT- F-00R 2040 Prod Sorghum stubble

N03	kg	103	0	0.036	12281.06	1340.49
TP	kg	103	0	0.009	95744.16	7243.32
TSS	Mt	103	0	0.007	134571.82	9608.31
area	ha	103	0	1.710	876414.18	149709.04
qnty	Mt	103	0	0.000	52617.16	7633.30

BC1:135N-2S-NT- F-80R 2040 Prod Sorghum stubble

N03	kg	103	0	0.034	10298.18	1021.90
TP	kg	103	0	0.009	79231.35	6307.17
TSS	Mt	103	0	0.008	148950.60	10895.59
area	ha	103	0	1.710	876414.18	149709.04
qnty	Mt	103	0	0.000	52438.14	7752.29

s c e n a r i o	y e a r	s e r v i c e	f e e d s t o c k	i n d i c a t o r	u n i t s	—	—	—	—	—
BC1:168N-1S-CT- F-	R	2040	Prod Biomass sorghum	N03	kg	24	0	10.958	36383.20	7202.24
				TP	kg	24	0	76.804	264223.13	47228.17
				TSS	Mt	24	0	42.868	525891.92	97712.45
				area	ha	24	0	116.303	346039.43	61008.83
				qnty	Mt	24	0	27.395	150504.19	25977.87
BC1:168N-1S-NT- F-	R	2040	Prod Biomass sorghum	N03	kg	24	0	10.989	36442.90	7218.51
				TP	kg	24	0	71.344	201711.18	35193.82
				TSS	Mt	24	0	43.948	524740.82	97522.10
				area	ha	24	0	116.303	346039.43	61008.83
				qnty	Mt	24	0	27.190	150553.62	25987.17
BC1:168N-2S-CT- F-	R	2040	Prod Biomass sorghum	N03	kg	24	0	10.122	49714.52	8696.25
				TP	kg	24	0	76.564	263946.38	47132.33
				TSS	Mt	24	0	42.784	525487.84	97432.62
				area	ha	24	0	116.303	346039.43	61008.83
				qnty	Mt	24	0	27.386	150502.02	25977.44
BC1:168N-2S-NT- F-	R	2040	Prod Biomass sorghum	N03	kg	24	0	10.152	49787.42	8714.89
				TP	kg	24	0	71.106	201581.24	35149.34
				TSS	Mt	24	0	43.862	524336.87	97242.78
				area	ha	24	0	116.303	346039.43	61008.83
				qnty	Mt	24	0	27.182	150551.62	25986.76
BC1:202N-1S-CT- F-	R	2040	Prod Biomass sorghum	N03	kg	24	0	14.999	46702.64	9168.38
				TP	kg	24	0	76.804	264233.47	47229.92
				TSS	Mt	24	0	42.868	525888.27	97736.27
				area	ha	24	0	116.303	346039.43	61008.83
				qnty	Mt	24	0	27.395	150525.92	25984.91

s c e n a r i o	y e a r	s e a c e	f e e d s t o c k	i n d i c a t o r	u n i t s	—	—	—	—	—
BC1:202N-1S-NT- F-	R	2040	Prod Biomass sorghum	N03	kg	24	0	15.054	46766.47	9186.77
				TP	kg	24	0	71.344	201721.96	35197.01
				TSS	Mt	24	0	43.948	524737.68	97547.55
				area	ha	24	0	116.303	346039.43	61008.83
				qnty	Mt	24	0	27.190	150574.31	25993.99
BC1:202N-2S-CT- F-	R	2040	Prod Biomass sorghum	N03	kg	24	0	13.801	63875.35	11112.37
				TP	kg	24	0	76.564	263956.44	47134.09
				TSS	Mt	24	0	42.785	525484.40	97456.14
				area	ha	24	0	116.303	346039.43	61008.83
				qnty	Mt	24	0	27.386	150523.83	25984.52
BC1:202N-2S-NT- F-	R	2040	Prod Biomass sorghum	N03	kg	24	0	13.854	63952.66	11133.17
				TP	kg	24	0	71.106	201592.22	35152.52
				TSS	Mt	24	0	43.862	524333.73	97267.92
				area	ha	24	0	116.303	346039.43	61008.83
				qnty	Mt	24	0	27.182	150572.30	25993.63
BC1:235N-1S-CT- F-	R	2040	Prod Biomass sorghum	N03	kg	24	0	18.959	56948.78	11124.43
				TP	kg	24	0	76.805	264254.79	47232.96
				TSS	Mt	24	0	42.869	525956.73	97765.24
				area	ha	24	0	116.303	346039.43	61008.83
				qnty	Mt	24	0	27.395	150532.45	25989.00
BC1:235N-1S-NT- F-	R	2040	Prod Biomass sorghum	N03	kg	24	0	19.010	57013.44	11144.98
				TP	kg	24	0	71.344	201733.75	35199.85
				TSS	Mt	24	0	43.948	524805.14	97577.45
				area	ha	24	0	116.303	346039.43	61008.83
				qnty	Mt	24	0	27.190	150581.06	25998.03

s			f	i					
c			e	n					
e			e	d					
n			d	i					
a	y	s	s	c	u	—	—	—	—
r	e	r	t	a	n	o	m	m	m
i	a	c	o	t	i	b	i	i	a
o	r	e	c	o	t	s	s	n	x
			k	r	s	—	—	—	—

BC1:235N-2S-CT- F- R 2040 Prod Biomass sorghum

N03	kg	24	0	17.397	77945.65	13514.49
TP	kg	24	0	76.565	263977.42	47137.14
TSS	Mt	24	0	42.785	525553.19	97485.29
area	ha	24	0	116.303	346039.43	61008.83
qnty	Mt	24	0	27.386	150530.45	25988.63

BC1:235N-2S-NT- F- R 2040 Prod Biomass sorghum

N03	kg	24	0	17.446	78024.00	13536.93
TP	kg	24	0	71.106	201604.35	35155.42
TSS	Mt	24	0	43.863	524401.38	97297.97
area	ha	24	0	116.303	346039.43	61008.83
qnty	Mt	24	0	27.182	150579.05	25997.68