

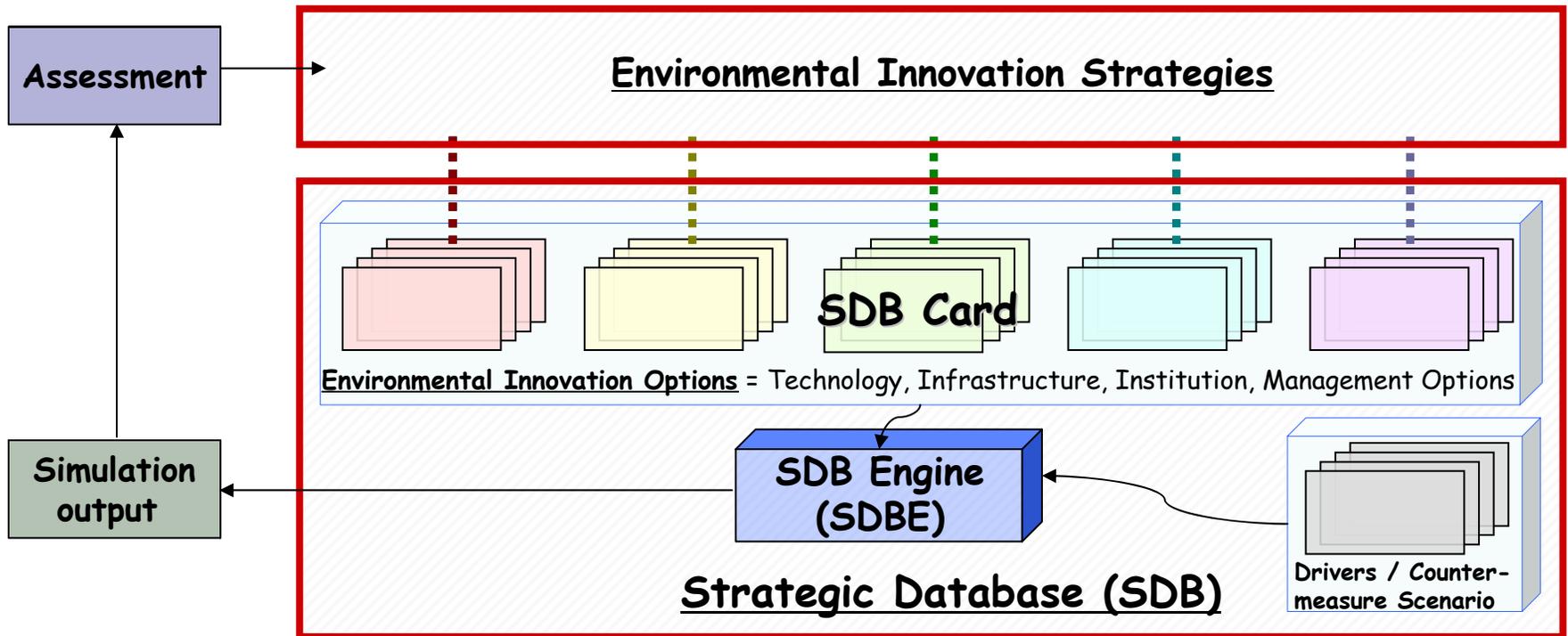
Strategic Database

Go Hibino of MHIR

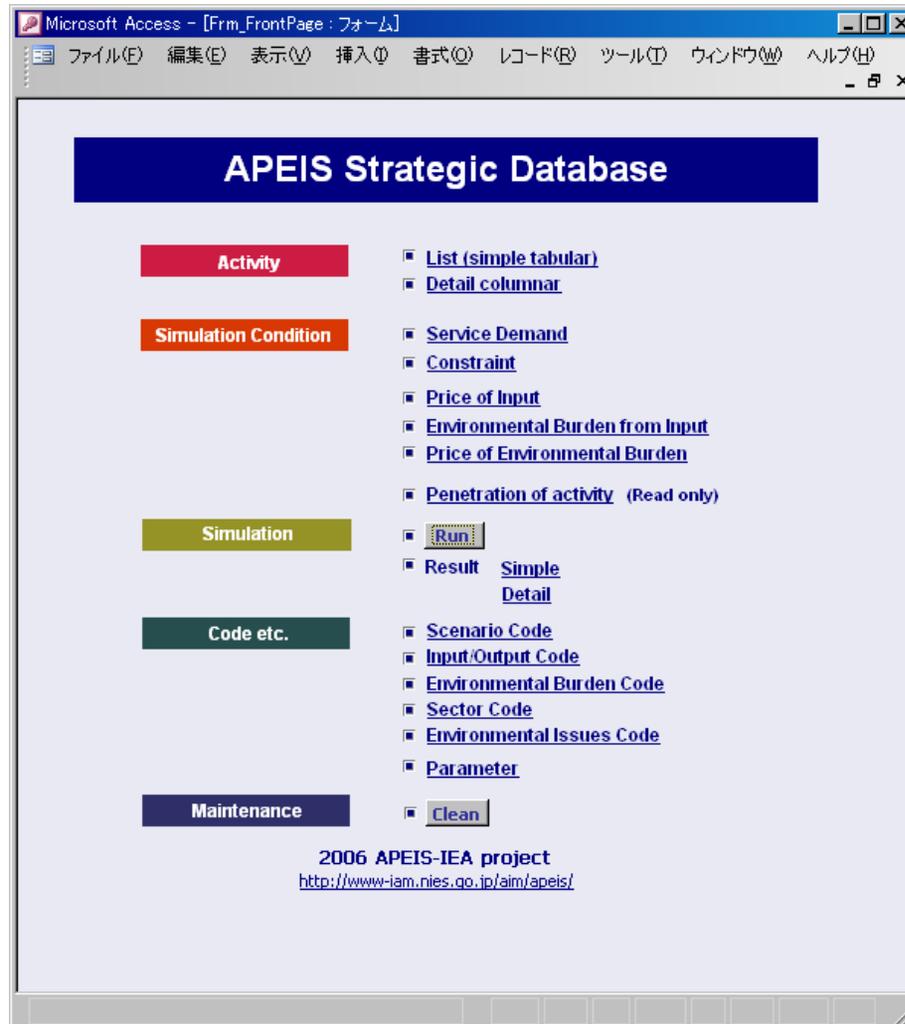
2006.10.19

AIM Training Workshop 2006

What is SDB ?



Start form of SDB



Specification of Activity

Microsoft Access - [Activity : フォーム]

ファイル(F) 編集(E) 表示(V) 挿入(I) 書式(O) レコード(R) ツール(T) ウィンドウ(W) ヘルプ(H) 質問を入力してください

Activity

Activity	6106 TR_PV_EL1	Sector	[TR]:Transportation sector
	PS. Vehicle / Electric	ENV. Issue	[CC]:Climate Change
Activity type	<input checked="" type="radio"/> To satisfy service demand <input type="radio"/> To influence flow <input type="radio"/> To influence other activity	Activity Unit	Name Unit Value 1
Description	In electric cars, an electric motor and control unit form the power unit, and the electric motor runs on electricity stored in a battery. Recently, third generation electric cars equipped with nickel metal hydride batteries or lithium-ion batteries have appeared, and their performance has improved nearly to the level of conventional cars.	Contact Prs.	GH of MHIR

Figure Memo



(NIES) 1

Lifetime
 Fixed Cost
 O+M Cost
 Input
 Output
 Affected Activity
 Affected Flow
 Burden
 Penetration
 Reference

	2000	2010	2020	2030	2040	2050	Note
	9.96						*4

Note: Only one record is valid. Do not enter multiple records for an activity

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レコード: 6 / 42

Procedure of estimation

Microsoft Access - [Activity : フォーム]

ファイル(F) 編集(E) 表示(V) 挿入(I) 書式(O) レコード(R) ツール(T) ウィンドウ(W) ヘルプ(H) 質問を入力してください

Activity

Activity: 6101 TR_PV_G01
Sector: [TR]:Transportation sector
ENW. Issue: [CC]:Climate Change
Activity type: To satisfy service demand To influence flow
 To influence other activity
Description: Passenger oil vehicle with internal combustion.

Activity Unit: Name Unit Value 1
Contact Prs.: GH of MHIR

Figure Memo

a) Stock number of passenger vehicle (1000 units, 2000)
= 10,084(Light)+28,202(Small)+14,163(Ordinary) (*1)
= 52,499

b) Fuel consumption of passenger vehicle (1000kj, 2000) (*2)
- Gasoline = 50,149(Private)+97(Commercial)=50,246
- Diesel = 6,434(Private)+52(Commercial)=6,486
- LPG = 2,750

c) Calorific value (kgoe/l) (*3)
- Gasoline = 0.8226
- Diesel = 0.9126
- LPG = 28.1MJ/kj = 0.6722

d) Fuel consumption of passenger vehicle (ktoe)

Lifetime Fixed Cost O+M Cost Input Output Affected Activity Affected Flow Burden Penetration Reference

Input	2000	2010	2020	2030	2040	2050	Note
[OLG]: Gasoline (kgoe)	935.2	748.2	710.8	673.4	636	598.6	e), h), i)

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レコード: 1 / 42

Reference of estimation

Microsoft Access - [Activity : フォーム]

Adobe Acrobat Standard - [交通経済統計要覧2003.pdf - リンクされたファイル]

Activity: テキスト選択ツール

Activity b: 291 x 209.9 ミリ

Describe: 署名、レイヤー、ページ、注釈

114 施設 自動車保有数 (Number of Motor Vehicles Owned)

区分	Section	4/1/97	5/1/97	5/1/98	4/1/98
合計	Sum Total	18 919 020	29 143 445	38 992 023	48 240 335
計	Total	12 779 069	23 018 060	31 249 920	35 226 180
普通車	計 Total	833 865	1 175 453	1 502 408	1 673 148
私家用	Private use	585 216	822 443	1 051 653	1 132 089
営業用	Business use	248 649	353 010	450 755	541 059
小型車	計 Total	4 511 700	6 124 458	7 109 706	6 563 119
私家用	Private use	4 428 040	6 041 186	7 023 713	6 469 512
営業用	Business use	83 660	83 472	85 993	93 607
三輪	計 Total	111 080	40 816	13 551	3 883
私家用	Private use	101 655	36 241	12 922	3 667
営業用	Business use	9 425	2 575	629	216
軽自動車	計 Total	23 748	45 097	57 313	65 848
私家用	Private use	9 141	9 707	8 564	6 156
営業用	Business use	14 607	35 390	48 749	59 692
バス	計 Total	103 742	106 104	104 655	109 080
私家用	Private use	28 024	21 300	21 736	24 400
営業用	Business use	83 228	84 804	84 919	84 680
トラック	計 Total	84 304	113 841	122 974	131 703
私家用	Private use	84 614	111 858	119 225	116 263
営業用	Business use	1 690	1 983	3 549	5 440
乗用車	計 Total	74 739	215 170	279 483	214 714
私家用	Private use	73 097	212 864	278 204	212 294
営業用	Business use	2 882	2 306	1 639	2 232
小型車	計 Total	6 780 190	14 056 923	21 063 657	23 132 802
私家用	Private use	4 485 296	14 365 861	20 614 702	24 882 543
営業用	Business use	214 892	241 042	248 955	250 219
普通車	計 Total	152 496	287 824	385 192	468 836
私家用	Private use	121 643	231 409	309 933	373 113
営業用	Business use	30 853	56 335	75 239	95 723
小型車	計 Total	72 325	96 805	117 428	123 721
私家用	Private use	64 908	92 992	115 411	120 227
営業用	Business use	5 617	3 893	4 027	4 544
大型特殊車	Large special	121 638	211 039	289 395	341 194
計	Total	6 139 951	6 124 505	7 742 091	12 122 375
小型二輪車	Small	171 533	257 208	444 975	850 615
計	Total	5 968 418	5 867 297	7 297 116	12 061 760
計	Total	5 298 271	5 385 126	6 291 513	10 689 060
四輪	用	2 227 644	2 255 450	2 102 619	1 945 616
二輪	用	2 970 627	2 829 676	4 188 894	8 743 444
計	Total	528 627	489 229	574 291	1 173 467

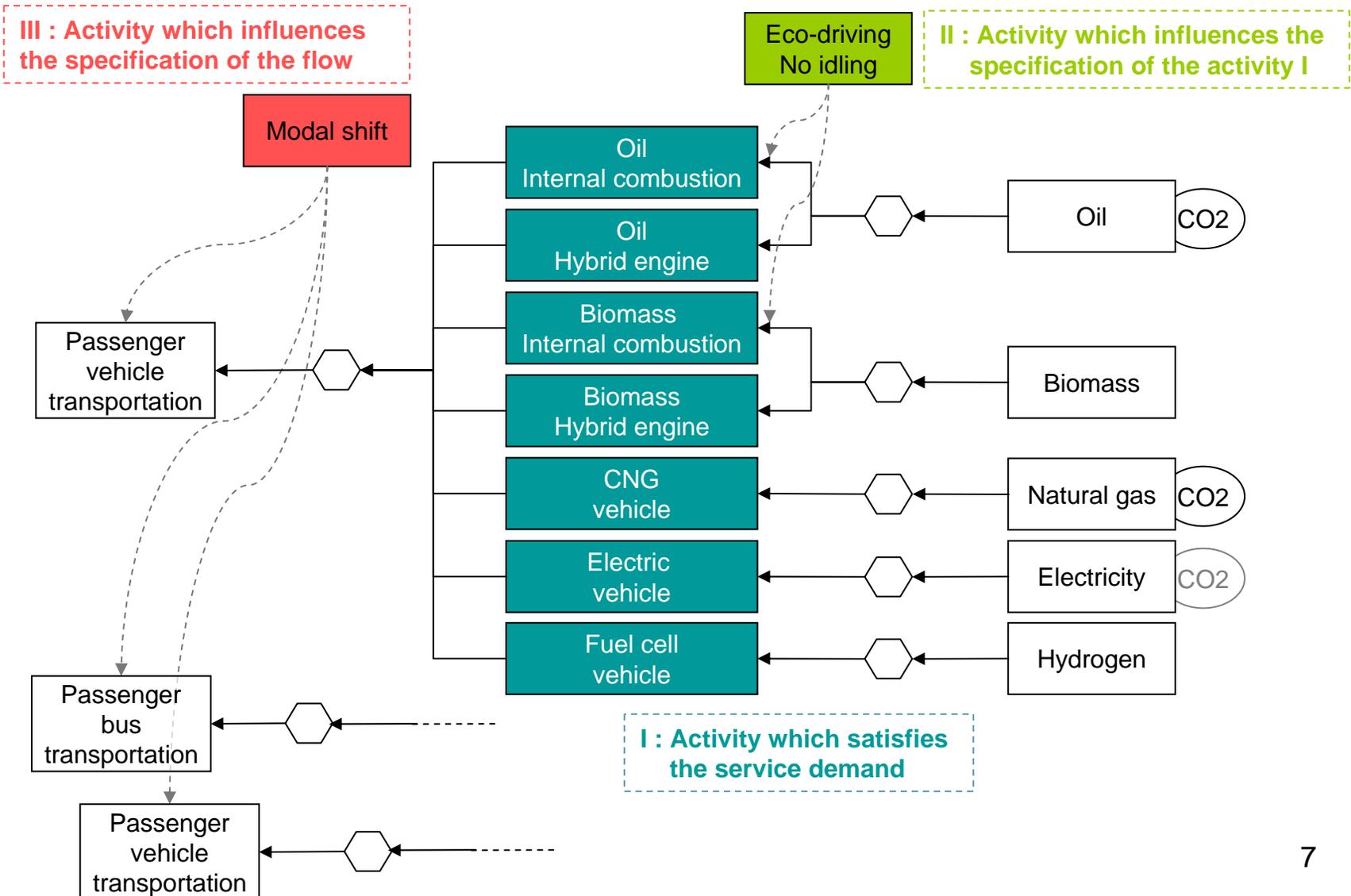
115 施設 車両数 (Vehicles Owned)

年	2/1991	2/1995	9/1997	10/1998	11/1999	12/2000	13/2001	14/2002
合計	42 230 451	47 727 850	51 727 297	52 121 422	52 264 404	52 461 216	52 423 222	52 274 189
普通車	2 304 081	2 584 134	2 655 607	2 626 175	2 594 535	2 580 392	2 584 158	2 517 510
私家用	1 474 161	1 734 729	1 763 933	1 739 844	1 724 931	1 680 486	1 656 668	1 621 103
営業用	731 920	849 427	891 734	886 331	869 604	901 104	897 500	897 407
小型車	6 537 630	6 151 177	5 907 754	5 719 268	5 539 100	5 389 436	5 216 390	5 014 046
私家用	6 444 029	6 065 316	5 826 249	5 637 900	5 459 328	5 310 039	5 138 306	4 939 466
営業用	93 601	85 861	85 505	81 368	79 772	79 397	78 084	76 580
三輪	2 355	1 448	1 344	1 293	1 253	1 214	1 175	1 146
軽自動車	1 929	1 336	1 232	1 182	1 142	1 117	1 074	1 050
バス	136	112	112	111	111	99	99	98
トラック	86 765	121 049	128 444	129 559	131 246	134 042	135 112	136 216
乗用車	4 401	9 177	9 400	9 629	9 474	9 306	9 234	8 956
バス	82 274	111 872	119 014	119 930	121 772	124 736	125 878	127 220
トラック	135 103	114 396	112 540	111 184	110 270	110 226	110 226	110 208
乗用車	28 137	29 160	28 667	28 214	27 929	27 438	26 757	26 210
バス	86 966	85 236	83 873	82 970	82 241	82 607	83 469	82 998
トラック	130 741	128 511	127 526	125 962	125 455	125 265	124 018	122 972
乗用車	122 877	118 529	115 518	112 998	111 446	109 544	104 953	102 169
バス	7 864	9 982	11 008	12 964	14 009	15 721	17 065	17 803
トラック	1 933 533	8 383 410	11 385 626	12 324 936	13 233 731	14 163 357	14 938 584	15 433 640
乗用車	1 934 168	8 283 402	11 229 648	12 229 442	13 204 291	14 132 311	14 905 895	15 398 886
バス	7 364	20 008	25 978	27 494	29 460	31 046	32 691	34 854
トラック	30 502 964	30 799 296	29 977 367	29 455 940	28 621 974	28 201 712	27 589 146	27 221 229
乗用車	30 250 729	30 543 322	29 744 870	29 225 654	28 594 326	27 976 415	27 362 804	26 992 741
バス	252 225	225 974	222 497	230 285	227 648	225 297	224 242	224 478
トラック	630 742	858 482	1 012 268	1 007 813	1 001 212	1 014 403	1 021 057	1 019 176
乗用車	494 476	680 712	815 033	893 508	956 470	992 452	991 997	963 932
バス	134 266	177 770	197 235	204 305	212 742	222 151	229 660	235 244
トラック	148 000	174 420	194 095	208 672	216 824	216 609	208 763	196 815
乗用車	152 982	144 583	183 119	197 261	204 992	204 147	195 226	184 188
バス	7 038	9 847	10 976	11 411	11 832	12 432	12 557	12 647
トラック	422 807	491 493	514 966	518 627	520 804	523 149	524 533	524 147
乗用車	17 548 299	20 278 484	21 119 184	21 544 960	22 218 208	22 363 757	23 847 891	24 616 328
バス	999 854	1 099 013	1 243 577	1 289 252	1 268 399	1 288 417	1 234 354	1 232 199
トラック	16 768 545	19 149 473	19 875 509	20 297 728	21 029 809	21 255 340	22 513 237	23 264 129
乗用車	15 025 742	17 341 490	18 108 877	18 568 959	19 329 964	20 041 396	20 277 523	21 492 291
バス	2 713 534	3 945 822	7 401 213	8 185 273	9 344 424	10 094 285	10 959 261	11 814 447
トラック	12 310 428	11 375 848	10 707 644	10 383 719	10 157 522	9 957 111	9 817 964	9 675 844
乗用車	1 741 548	1 826 430	1 765 470	1 727 450	1 704 522	1 712 597	1 734 393	1 772 545

2006 APEIS-IEA project

レコード: 1 / 42

Application to transportation sector



Activity : Passenger vehicle with internal combustion

Microsoft Access - [Activity : フォーム]

ファイル(F) 編集(E) 表示(V) 挿入(I) 書式(O) レコード(R) ツール(T) ウィンドウ(W) ヘルプ(H) 質問を入力してください

Activity

Activity	6101 TR_PV_G01	Sector	[TR]:Transportation sector					
	PS. Vehicle / IC / Oil	ENV. Issue	[CC]:Climate Change					
Activity type	<input checked="" type="radio"/> To satisfy service demand <input type="radio"/> To influence flow <input type="radio"/> To influence other activity							
Description	Passenger oil vehicle with internal combustion.							
	Figure Memo  Allion by Toyota 1							
Lifetime Fixed Cost O+M Cost Input Output Affected Activity Affected Flow Burden Penetration Reference								
Unit:Share of the output to the total demand								
No	Scenario	2000	2010	2020	2030	2040	2050	Note
▶ 601	RF	100%	100%	100%	100%	100%	100%	
	1601 CM-1	100%	80%	60%	40%	20%	0%	
	2601 CM-2	100%	80%	60%	40%	20%	0%	
*								

2006 APEIS-IEA project

レコード: 1 / 42

Activity : Passenger vehicle with fuel cell

Microsoft Access - [Activity : フォーム]

ファイル(F) 編集(E) 表示(V) 挿入(I) 書式(O) レコード(R) ツール(T) ウィンドウ(W) ヘルプ(H) 質問を入力してください

Activity

Activity	6107 TR_PV_FC1	Sector	[TR]:Transportation sector
	PS. Vehicle / Fuel cell	ENV. Issue	[CC]:Climate Change
Activity type	<input checked="" type="radio"/> To satisfy service demand <input type="radio"/> To influence flow <input type="radio"/> To influence other activity	Activity Unit	Name Unit Value 1
Description	Passenger fuel cell vehicle.	Contact Prs.	GH of MHIR

Figure Memo



Fuel cell vehicle (kantei) 1

Lifetime
 Fixed Cost
 O+M Cost
 Input
 Output
 Affected Activity
 Affected Flow
 Burden
 Penetration
 Reference

Unit = JPY

	2000	2010	2020	2030	2040	2050	Note
	10,000,000	10,000,000	5,000,000	3,000,000	2,000,000	1,500,000	

Note: Only one record is valid. Do not enter multiple records for an activity

2006 APEIS-IEA project

レコード: 7 / 42

Activity : Passenger bio-fuel vehicle with hybrid engine

Microsoft Access - [Activity : フォーム]

ファイル(E) 編集(E) 表示(V) 挿入(I) 書式(O) レコード(R) ツール(T) ウィンドウ(W) ヘルプ(H) 質問を入力してください

Activity

Activity	6104 TR_PV_BH1	Sector	[TR]:Transportation sector
	PS. Vehicle / Hybrid / Biomass	ENV. Issue	[CC]:Climate Change
Activity type	<input checked="" type="radio"/> To satisfy service demand <input type="radio"/> To influence flow <input type="radio"/> To influence other activity	Activity Unit	Name Unit Value 1
Description	Passenger bio-alcohol vehicle with hybrid engine.	Contact Prs.	GH of MHIR

Figure Memo



Lifetime Fixed Cost O+M Cost Input Output Affected Activity Affected Flow Burden Penetration Reference

No	Scenario	2000	2010	2020	2030	2040	2050	Note
604	RF	0%	0%	0%	0%	0%	0%	
1604	CM-1	0%	0%	0%	0%	0%	0%	
▶ 2604	CM-2	0%	0%	10%	40%	80%	100%	
*								

Unit:Share of the output to the total demand

2006 APEIS-IEA project

レコード: 4 / 42

Activity : Modal shift to public transportation system

Microsoft Access - [Activity : フォーム]

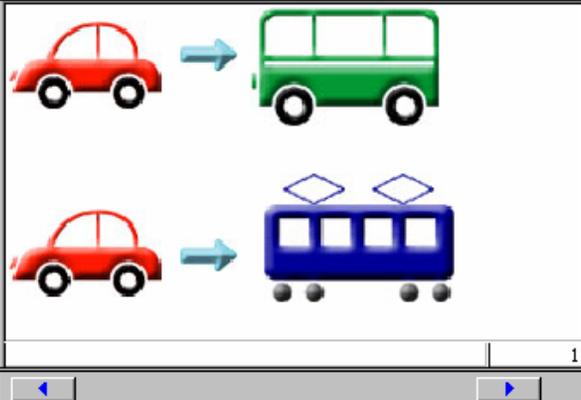
ファイル(F) 編集(E) 表示(V) 挿入(I) 書式(O) レコード(R) ツール(T) ウィンドウ(W) ヘルプ(H) 質問を入力してください

Activity

Activity: 6401 MDL_SHT
 Modal shift
 Activity type: To satisfy service demand To influence flow To influence other activity
 Description: [Empty]

Sector: [TR]:Transportation sector
 ENV. Issue: [CC]:Climate Change
 Activity Unit: Name Value
 Contact Prs: GH of MHIR

Figure Memo



Lifetime Fixed Cost O+M Cost Input Output Affected Activity Affected Flow Burden Penetration Reference

Unit: Stock number in the above base unit

No	Scenario	2000	2010	2020	2030	2040	2050	Note
▶ 1	RF	0	0	0	0	0	0	
2	CM-1	0	0	0	0	0	0	
3	CM-2	0	2,000	4,000	6,000	8,000	10,000	
*								

2006 APEIS-IEA project

レコード: 42 / 42

Activity : No Idling

Microsoft Access - [Activity : フォーム]

ファイル(F) 編集(E) 表示(V) 挿入(I) 書式(O) レコード(R) ツール(T) ウィンドウ(W) ヘルプ(H) 質問を入力してください

Activity

Activity	6301 TR_ED_NIDL	Sector	[TR]:Transportation sector
	Eco-driving: No idling	ENV. Issue	[CC]:Climate Change
Activity type	<input type="radio"/> To satisfy service demand <input type="radio"/> To influence flow <input checked="" type="radio"/> To influence other activity	Activity Unit	Name Unit Value 1
		Contact Prs.	GH of MHIR
Description	<p>Turning off the engine to prevent wasted energy when stopping to wait for passengers, or to unload luggage. Ten minutes of idling in a passenger car uses 130 cc of gasoline, while 1 hour of idling in a large diesel vehicle uses a maximum of 1,800 cc of fuel. In general, stopping idling when stopped for 5 seconds or more is thought to be effective.</p>		
	<p>Figure Memo</p>  <p>Image of "No idling" 1</p>		

Lifetime Fixed Cost O+M Cost Input Output Affected Activity Affected Flow Burden Penetration Reference

Unit:Introduction ratio to the corresponding activity

No	Scenario	2000	2010	2020	2030	2040	2050	Note
1	RF	0%	0%	0%	0%	0%	0%	
2	CM-1	0%	0%	0%	0%	0%	0%	
3	CM-2	0%	10%	30%	50%	70%	100%	
*								

2006 APEIS-IEA project

レコード: 41 / 42

Service demand

Microsoft Access - [Service]

ファイル(F) 編集(E) 表示(V) 挿入(I) 書式(O) レコード(R) ツール(T) ウィンドウ(W) ヘルプ(H) 質問を入力してください

Service Demand

No.	Service type	Scenario	2000	2010	2020	2030	2040
601	[TRP_V]:PS. Vehicle (M Prs-km)	RF	741,146	784,421	827,695	776,328	724,960
605	[TRP_VB]:PS. Bus (M Prs-km)	RF	87,307	96,246	105,186	98,658	92,130
606	[TRP_RL]:PS. Rail (M Prs-km)	RF	384,441	428,635	472,829	443,485	414,141
607	[TRP_SH]:PS. Ship (M Prs-km)	RF	4,304	4,702	5,099	4,783	4,466
608	[TRP_AR]:PS. Air (M Prs-km)	RF	79,700	107,821	135,941	127,504	119,066
609	[TRF_VM]:FR. Vehicle M-size (M ton-km)	RF	10,275	7,883	5,491	5,150	4,809
610	[TRF_VL]:FR. Vehicle L-size (M ton-km)	RF	302,843	312,691	322,539	302,522	282,505
611	[TRF_RL]:FR. Rail (M ton-km)	RF	22,136	24,082	26,027	24,412	22,797
612	[TRF_SH]:FR. Ship (M ton-km)	RF	241,671	244,217	246,764	231,449	216,135
613	[TRF_AR]:FR. Air (M ton-km)	RF	1,075	1,361	1,647	1,545	1,443
1601	[TRP_V]:PS. Vehicle (M Prs-km)	CM-1	741,146	784,421	827,695	776,328	724,960
1605	[TRP_VB]:PS. Bus (M Prs-km)	CM-1	87,307	96,246	105,186	98,658	92,130
1606	[TRP_RL]:PS. Rail (M Prs-km)	CM-1	384,441	428,635	472,829	443,485	414,141
1607	[TRP_SH]:PS. Ship (M Prs-km)	CM-1	4,304	4,702	5,099	4,783	4,466
1608	[TRP_AR]:PS. Air (M Prs-km)	CM-1	79,700	107,821	135,941	127,504	119,066
1609	[TRF_VM]:FR. Vehicle M-size (M ton-km)	CM-1	10,275	7,883	5,491	5,150	4,809
1610	[TRF_VL]:FR. Vehicle L-size (M ton-km)	CM-1	302,843	312,691	322,539	302,522	282,505
1611	[TRF_RL]:FR. Rail (M ton-km)	CM-1	22,136	24,082	26,027	24,412	22,797
1612	[TRF_SH]:FR. Ship (M ton-km)	CM-1	241,671	244,217	246,764	231,449	216,135
1613	[TRF_AR]:FR. Air (M ton-km)	CM-1	1,075	1,361	1,647	1,545	1,443
2601	[TRP_V]:PS. Vehicle (M Prs-km)	CM-2	741,146	784,421	827,695	776,328	724,960
2605	[TRP_VB]:PS. Bus (M Prs-km)	CM-2	87,307	96,246	105,186	98,658	92,130
2606	[TRP_RL]:PS. Rail (M Prs-km)	CM-2	384,441	428,635	472,829	443,485	414,141
2607	[TRP_SH]:PS. Ship (M Prs-km)	CM-2	4,304	4,702	5,099	4,783	4,466
2608	[TRP_AR]:PS. Air (M Prs-km)	CM-2	79,700	107,821	135,941	127,504	119,066
2609	[TRF_VM]:FR. Vehicle M-size (M ton-km)	CM-2	10,275	7,883	5,491	5,150	4,809
2610	[TRF_VL]:FR. Vehicle L-size (M ton-km)	CM-2	302,843	312,691	322,539	302,522	282,505
2611	[TRF_RL]:FR. Rail (M ton-km)	CM-2	22,136	24,082	26,027	24,412	22,797
2612	[TRF_SH]:FR. Ship (M ton-km)	CM-2	241,671	244,217	246,764	231,449	216,135
2613	[TRF_AR]:FR. Air (M ton-km)	CM-2	1,075	1,361	1,647	1,545	1,443
*							

2006 APEIS-IEA project

Simulation Results : CO₂ emission

