VIPRISCAR

Validation of an industrial process to manufacture isosorbide bis(methyl carbonate) at pilot level

Deliverable D1.5

Project Management Plan (I)

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1	29-10-2018	First version	Hector Linuesa (LEITAT)

EXECUTIVE SUMMARY

The main purpose of this deliverable is to document the Work Breakdown Structure (WBS) and the related elements that support the project's schedule:

Project task durations, dependencies and responsibilities,

Project milestones,

- Project deliverables,
- Project management mechanisms, and
- Gantt Chart.

The VIPRISCAR project work plan is results-based, with each Work Package (WP) mapping to an objective to produce new bioproducts form IBMC. The project is structured to ensure balanced work load and unambiguous responsibility for tasks and deliverables, with each deliverable responsibility of the task leader unless otherwise explicit in the WP description.

A Gantt Chart is annexed to this document to better understand the schedule of the different Work Packages and their components. The inter-relationships among the different project tasks and components is presented both graphically and in WP tables. The project schedule will be managed through success criteria, milestones and periodic control mechanisms.

The actual schedule performance will be compared to planned performance to implement corrective action when actual performance deviates from planned or required performance.

The Project Management Plan will be updated four times during the project execution (at Months 3, 12, 24 and 36).

Furthermore, Work Package and Tasks Leaders will be responsible for reporting on their activities at every Project Steering Committee meeting (every 6 months) to allow project progress to be tracked seamlessly. The actual Gantt Chart will then reflect progress achieved and agreement of the revised schedule, if necessary.

The intended audience of the Project Management Plan (PMP) is all project stakeholders including the BBI-JU, senior leadership and the project team.

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ABBREVIATIONS AND ACRONYMS

GA	Grant Agreement
PM	Person-months
PMP	Project Management Plan
WBS	Work Breakdown Structure
WP	Work Package

1. INTRODUCTION

The Grant Agreement (GA) provides an in-depth description of the different Work Packages and components. However, the information is presented in such a way that hampers the appropriate management during project execution.

The Project Management Plan (PMP) is a formal document used to guide both project execution and project control. By showing the major deliverables, milestones, activities and responsibilities on the project, it is also a statement of how and when a project's objectives are to be achieved.

The main purpose of this deliverable is therefore to document the Work Breakdown Structure (WBS) and the related elements that support the project's schedule:

- Project task durations, dependencies and responsibilities,
- Project milestones,
- Project deliverables,
- Project management mechanisms, and
- Gantt Chart.

The intended audience of the PMP is all project stakeholders including the BBI-JU, senior leadership and the project team.

This deliverable, directly linked to task T1.2, is structured in the following chapters:

- **Chapter 1**: Introduction. Main purpose, intended audience and structure of the document.
- **Chapter 2**: Work breakdown structure and schedule. Work plan structure and individual Work Package description.
- **Chapter 3**: Graphical presentation of tasks interdependencies. Inter-relationships among the different project tasks and components
- **Chapter 4**: Schedule management. Success criteria, milestones and periodic control mechanisms.
- **Annex I**: VIPRISCAR Project Gantt Chart.

2. WORK BREAKDOWN STRUCTURE AND SCHEDULE

2.1 WORK PLAN STRUCTURE

The VIPRISCAR project work plan is results-based, with each Work Package mapping to an objective to produce new bioproducts form IBMC, as presented in sections 1.3.1, 1.3.3 and 1.3.4 of the Grant Agreement. In addition, many issues are cutting across each Work Package, risk, costs and data collection. WP8 is in charge of providing consistent methodology, data collection protocol and integration of this information.

The project is structured to ensure balanced work load and unambiguous responsibility for tasks and deliverables, with each deliverable responsibility of the task leader unless otherwise explicit in the WP description.

Table 1 summarises the main project components. In the following sections, details of the individual Work Packages are given including interdependencies among tasks and deliverables. A Gantt Chart is annexed to this document to better understand the schedule of the different Work Packages and their components.

TABLE 2.1: LIST OF WORK PACKAGES

WP	Title	Lead	PM	Start	End
WP1	Management and scientific coordination	TECNALIA	28	1	36
WP2	IBMC process development and validation at lab scale	TECNALIA	56	1	12
WP3	IBMC process validation at pilot plant	B4P	45	9	24
WP4	Coating application proof-of-principle	AEP	64	13	36
WP5	Adhesives application proof of principle	JOWAT	79.4	13	36
WP6	Bifunctional catheters application proof of principle	CIKAUTXO	57	13	36
WP7	LCA, REACH and cost analysis	VERTECH	64	6	36
WP8	Exploitation, Dissemination and Communication	VERTECH	55	1	36
WP9	Ethics Requirement	TECNALIA	N/A	1	36
			448.4		

2.2 WP1: Management and scientific coordination

TABLE 2.2: WBS FOR WP1

Participant number	**1**	2	3	4	5	6	7	8	9
Short name of participant	**TECNALIA**	JOWAT	CIKAUTXO	B4P	AEP	VERTECH	EXERGY	GAIKER	LEITAT

ID	Description	Lead	Participants	Depends	Start	Due
WP1	**Management and scientific coordination**	**1**	**2, 3, 4, 5, 6, 7, 8, 9**	**-**	**1**	**36**
T1.1	Project coordination and quality assurance	1	2, 3, 4, 5, 6, 7, 8, 9	-	1	36
T1.2	Communication, reporting and monitoring	1	2, 3, 4, 5, 6, 7, 8, 9	T8.5	1	36

		Partner nº									
Planned Effort (PM)	**Project**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**T**
	T1.1	10	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	14
	T1.2	10	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	14
	Total	**20**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**28**
	RP1	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**T**
	T1.1	5	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	7
	T1.2	5	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	7
	Total	**10**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**14**
	RP2	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**T**
	T1.1	5	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	7
	T1.2	5	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	7
	Total	**10**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**14**

ID	Description	Lead	Participants	Depends	Start	Due
D1.1	Quality Assurance Plan (I)	1	2, 3, 4, 5, 6, 7, 8, 9	T1.1	-	3
D1.2	Quality Assurance Plan (II)	1	2, 3, 4, 5, 6, 7, 8, 9	T1.1	-	12
D1.3	Quality Assurance Plan (III)	1	2, 3, 4, 5, 6, 7, 8, 9	T1.1		24
D1.4	Quality Assurance Plan (IV)	1	2, 3, 4, 5, 6, 7, 8, 9	T1.1		36
D1.5	Project Management Plan (I)	1	2, 3, 4, 5, 6, 7, 8, 9	T1.2		3
D1.6	Project Management Plan (II)	1	2, 3, 4, 5, 6, 7, 8, 9	T1.2		12
D1.7	Project Management Plan (III)	1	2, 3, 4, 5, 6, 7, 8, 9	T1.2		24
D1.8	Project Management Plan (IV)	1	2, 3, 4, 5, 6, 7, 8, 9	T1.2		36

2.3 WP2: IBMC process development and validation at lab scale

TABLE 2.3: WBS FOR WP2

Participant number	1	4	7
Short name of participant	TECNALIA	B4P	EXERGY

ID	Description	Lead	Participants	Depends	Start	Due
WP2	**IBMC Process development and validation at lab scale**	**1**	**4, 7**	**-**	**1**	**12**
T2.1	Reaction improvement	1	4		1	12
T2.2	Separation and purification procedure	1	4	T2.1	4	12
T2.3	Pre-up-scaling	1	4	T2.1, T2.2	10	12
T2.4	Process design and integration	7	1, 4	T2.1, T2.2, T2.3	6	12
T2.5	Process simulation and preliminary up-scaling	7	1, 4	T2.4	8	12

		Partner nº									
Planned Effort (PM)	**Project**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**T**
	T2.1	13	0	0	1	0	0	0	0	0	14
	T2.2	13	0	0	1	0	0	0	0	0	14
	T2.3	10	0	0	1	0	0	0	0	0	11
	T2.4	2	0	0	0.6	0	0	6	0	0	8.6
	T2.5	2	0	0	0.4	0	0	6	0	0	8.4
	Total	**40**	**0**	**0**	**4**	**0**	**0**	**12**	**0**	**0**	**56**
	RP1	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**T**
	T2.1	13	0	0	1	0	0	0	0	0	14
	T2.2	13	0	0	1	0	0	0	0	0	14
	T2.3	10	0	0	1	0	0	0	0	0	11
	T2.4	2	0	0	0.6	0	0	6	0	0	8.6
	T2.5	2	0	0	0.4	0	0	6	0	0	8.4
	Total	**40**	**0**	**0**	**4**	**0**	**0**	**12**	**0**	**0**	**56**
	RP2	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**T**
	T2.1	0	0	0	0	0	0	0	0	0	0
	T2.2	0	0	0	0	0	0	0	0	0	0
	T2.3	0	0	0	0	0	0	0	0	0	0
	T2.4	0	0	0	0	0	0	0	0	0	0
	T2.5	0	0	0	0	0	0	0	0	0	0
	Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

ID	Description	Lead	Participants	Depends	Start	Due
D2.1	Mid report on IBMC process development	1	4	T2.1	-	3
D2.2	Final report on IBMC process development. Lab Technology Manual	1	4	T2.3	-	12
D2.3	Process simulation and preliminary up-scaling report	7	1, 4	T2.5		24

ID	Description	Lead	Participants	Depends	Start	Due
MS1	Production of 1 kg of IBMC	1	-	-	-	12

2.4 WP3: IBMC process validation at pilot plant

TABLE 2.4: WBS FOR WP3

Participant number	1	**4**	7
Short name of participant	TECNALIA	**B4P**	EXERGY

ID	Description	Lead	Participants	Depends	Start	Due
WP3	**IBMC Process validation at pilot plant**	**4**	**1, 7**	**-**	**9**	**24**
T3.1	Intermediate scaling-up	4	1	T2.3	9	12
T3.2	Pilot plant design	4	1, 7	T2.5, T3.1	9	12
T3.3	Pilot plant starting	4	1	T2.5, T3.2	11	12
T3.4	Pilot plant operation	4	1, 7	T3.3	13	24
T3.5	Plant up-scaling simulation to industrial scale	7	4	T2.5, T3.4	11	24

		Partner nº									
Planned Effort (PM)	**Project**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**T**
	T3.1	3	0	0	5	0	0	0	0	0	8
	T3.2	3	0	0	5	0	0	4	0	0	12
	T3.3	3	0	0	5	0	0	0	0	0	8
	T3.4	1	0	0	5	0	0	2	0	0	8
	T3.5	0	0	0	2	0	0	7	0	0	9
	Total	**10**	**0**	**0**	**22**	**0**	**0**	**13**	**0**	**0**	**45**
	RP1	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**T**
	T3.1	3	0	0	5	0	0	0	0	0	8
	T3.2	3	0	0	5	0	0	4	0	0	12
	T3.3	3	0	0	5	0	0	0	0	0	8
	T3.4	0.5	0	0	2.5	0	0	1	0	0	4

	T3.5	0	0	0	1.14	0	0	4	0	0	5.14
	Total	**9.5**	**0.0**	**0.0**	**18.64**	**0.0**	**0.0**	**9**	**0**	**0**	**37.14**
	RP2	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**T**
	T3.1	0	0	0	0	0	0	0	0	0	0
	T3.2	0	0	0	0	0	0	0	0	0	0
	T3.3	0	0	0	0	0	0	0	0	0	0
	T3.4	0.5	0	0	2.5	0	0	1	0	0	4
	T3.5	0	0	0	0.86	0	0	3	0	0	3.86
	Total	**0.5**	**0**	**0**	**3.36**	**0**	**0**	**4**	**0**	**0**	**7.86**

ID	Description	Lead	Participants	Depends	Start	Due
D3.1	Mid report on IBMC pilot process validation, including adaptation/investments	4	1	T3.4	-	16
D3.2	Final protocol report on optimal IBMC pilot process	4	1, 7	T3.4	-	24
D3.3	Report on plant up-scaling simulation to industrial scale	7	4	T3.5		24

ID	Description	Lead	Participants	Depends	Start	Due
MS2	100 kg of IBMC produced	4	-	-	-	24

2.5 WP4: Coating application proof-of-principle

TABLE 2.5: WBS FOR WP4

Participant number	1	**5**	8
Short name of participant	TECNALIA	**AEP**	GAIKER

ID	Description	Lead	Participants	Depends	Start	Due
WP4	**Coating application proof-of-principle**	**5**	**1, 8**	**-**	**13**	**36**
T4.1	Waterborne polyurethane dispersions (PUDs) for coatings	8	1, 5	T3.4, T4.3	13	27
T4.2	IBMC based NIPUs for coatings	5	1, 8	T3.4, T4.3	13	27
T4.3	Coating formulation and testing of properties	5	8	T4.1, T4.2	19	36

		Partner nº									
Planned Effort (PM)	**Project**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**T**
	T4.1	0.5	0	0	0	6	0	0	22	0	28.5
	T4.2	0.5	0	0	0	6	0	0	8	0	14.5
	T4.3	0	0	0	0	6	0	0	15	0	21
	Total	**1**	**0**	**0**	**0**	**18**	**0**	**0**	**45**	**0**	**64**
	RP1	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**T**
	T4.1	0.29	0	0	0	3.43	0	0	12	0	15.71
	T4.2	0.29	0	0	0	3.43	0	0	5	0	8.71
	T4.3	0	0	0	0	0	0	0	0	0	0
	Total	**0.57**	**0**	**0**	**0**	**6.86**	**0**	**0**	**17**	**0**	**24.43**
	RP2	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**T**
	T4.1	0.21	0	0	0	2.57	0	0	10	0	12.79
	T4.2	0.21	0	0	0	2.57	0	0	3	0	5.79
	T4.3	0	0	0	0	6	0	0	15	0	21
	Total	**0.43**	**0**	**0**	**0**	**11.14**	**0**	**0**	**28**	**0**	**39.57**

ID	Description	Lead	Participants	Depends	Start	Due
D4.1	Waterborne polyurethane dispersions (PUDs) from hydroxylfunctional IBMC (oligo)carbonates	8	1, 5	T4.1	-	27
D4.2	IBMC-derived NIPUS with amino terminal groups	5	1, 8	T4.2	-	27
D4.3	IBMC based coatings from PUDs and NIPUS	5	8	T4.3		36

ID	Description	Lead	Participants	Depends	Start	Due
MS3	At least 1 IBMC-based polymer shows preliminary suitable behaviour for one of the applications	1	-	-	-	27

2.6 WP5: Adhesives application proof of principle

TABLE 2.6: WBS FOR WP5

Participant number	1	2	9
Short name of participant	TECNALIA	JOWAT	LEITAT

ID	Description	Lead	Participants	Depends	Start	Due
WP5	**Adhesives application proof-of-principle**	**2**	**1, 9**	**-**	**13**	**36**
T5.1	Adhesives based on IBMC and commercial polyester/polyether polyols.	9	2	T3.4, T5.3	13	27
T5.2	NIPUs-based adhesives	1	2	T3.4, T5.3	13	27
T5.3	Adhesives formulation and testing of properties	2	1, 9	T5.1, T5.2	24	36

		Partner nº									
Planned Effort (PM)	**Project**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**T**
	T5.1	0	1.7	0	0	0	0	0	0	22	23.7
	T5.2	15.5	1.7	0	0	0	0	0	0	0	17.2
	T5.3	15.5	5	0	0	0	0	0	0	18	38.5
	Total	**31**	**8.4**	**0**	**0**	**0**	**0**	**0**	**0**	**40**	**79.4**
	RP1	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**T**
	T5.1	0	0.97	0	0	0	0	0	0	12.57	13.54
	T5.2	8.86	0.97	0	0	0	0	0	0	0	9.83
	T5.3	0	0	0	0	0	0	0	0	0	0
	Total	**8.86**	**1.94**	**0**	**0**	**0**	**0**	**0**	**0**	**12.57**	**23.37**
	RP2	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**T**
	T5.1	0	0.73	0	0	0	0	0	0	9.43	10.16
	T5.2	6.64	0.73	0	0	0	0	0	0	0	7.37
	T5.3	15.5	5	0	0	0	0	0	0	18	38.5
	Total	**22.14**	**6.46**	**0**	**0**	**0**	**0**	**0**	**0**	**27.43**	**56.03**

ID	Description	Lead	Participants	Depends	Start	Due
D5.1	Selection of raw materials and definition of adhesives applications	1	2, 9	T5.1, T5.2	-	15
D5.2	Polycarbonate polyols from IBMC at lab scale (50g). Report on the preparation and characterisation of IBMC based adhesive prepolymers and	9	2	T5.1	-	20

	characterization thereof					
D5.3	Synthesis of IBMC-based NIPUs. First approaches	1	2	T5.2	-	20
D5.4	Raw materials (2 kg) for adhesive formulation provided by LEITAT to JOWAT	9	2	T5.1	-	27
D5.5	Synthesis of IBMC-based NIPUs. Final formulation	1	2	T5.2	-	27
D5.6	Adhesive formulations and characterization	2	1, 9	T5.3	-	36

ID	Description	Lead	Participants	Depends	Start	Due
MS3	At least 1 IBMC-based polymer shows preliminary suitable behaviour for one of the applications	1	-	-	-	27

2.7 WP6: Bifunctional catheters application proof of principle

TABLE 2.7: WBS FOR WP6

Participant number	1	**3**
Short name of participant	TECNALIA	**CIKAUTXO**

ID	Description	Lead	Participants	Depends	Start	Due
WP6	**Bifunctional catheters application proof-of-principle**	**3**	**1**	**-**	**13**	**36**
T6.1	Synthesis of bio-functionalized thermoplastic IBMC-based NIPUs.	1	3	T3.4, T6.2	13	24
T6.2	Processing of bio-functional IBMC-based NIPU into a catheter	3	1	T6.1, T6.3	24	36
T6.3	Assessment of Biocompatibility and biofunctionality of the final prototype	1	3	T6.2	24	36

		Partner nº									
Planned Effort (PM)	**Project**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**T**
	T6.1	15	0	3	0	0	0	0	0	0	18
	T6.2	10	0	9	0	0	0	0	0	0	19
	T6.3	15	0	5	0	0	0	0	0	0	20
	Total	**40**	**0**	**17**	**0**	**0**	**0**	**0**	**0**	**0**	**57**
	RP1	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**T**

	T6.1	7.5	0	1.5	0	0	0	0	0	0	9
	T6.2	0	0	0	0	0	0	0	0	0	0
	T6.3	0	0	0	0	0	0	0	0	0	0
	Total	**7.5**	**0**	**1.5**	**0**	**0**	**0**	**0**	**0**	**0**	**9**
	RP2	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**T**
	T6.1	7.5	0	1.5	0	0	0	0	0	0	9
	T6.2	10	0	9	0	0	0	0	0	0	19
	T6.3	15	0	5	0	0	0	0	0	0	20
	Total	**32.5**	**0**	**15.5**	**0**	**0**	**0**	**0**	**0**	**0**	**48**

ID	Description	Lead	Participants	Depends	Start	Due
D6.1	Synthesis of biofunctionalized thermoplastic IBMCbased NIPUs.	1	2, 9	T6.1	-	24
D6.2	Processing of biofunctional IBMC-based NIPU into a catheter	9	2	T6.2	-	36
D6.3	Biocompatibility and bio functionality of the final prototype	1	2	T6.3	-	36

ID	Description	Lead	Participants	Depends	Start	Due
MS3	At least 1 IBMC-based polymer shows preliminary suitable behaviour for one of the applications	1	-	-	-	27

2.8 WP7: LCA, REACH and cost analysis

TABLE 2.8: WBS FOR WP7

Participant number	1	2	3	4	5	**6**	7	8	9
Short name of participant	TECNALIA	JOWAT	CIKAUTXO	B4P	AEP	**VERTECH**	EXERGY	GAIKER	LEITAT

ID	Description	Lead	Participants	Depends	Start	Due
WP7	**LCA, REACH and cost analysis**	**6**	**1, 2, 3, 4, 5, 7, 8, 9**	**-**	**6**	**36**
T7.1	Technical evaluation of VIPRISCAR concepts	7	1, 4	T3.5	6	30
T7.2	Economic validation: Life cycle cost analysis (LCC) and economic feasibility	6	1, 2, 3, 4, 5, 7, 8, 9	T3.5, T4.3, T5.3, T6.2	6	36
T7.3	Environmental feasibility study including life cycle assessment (LCA)	6	1, 2, 3, 4, 5, 7, 8, 9	T3.5, T4.3, T5.3, T6.2	6	34
T7.4	Health and safety study (HSS)	1	6	T3.5, T4.3, T5.3, T6.2	6	32

T7.5	Definition of European and local legal and non-legal limitations, barriers and standards	6	1, 2, 3, 4, 5, 7, 8, 9	T7.4	6	36

		Partner nº									
Planned Effort (PM)	**Project**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**T**
	T7.1	1	0	0		0	0	8	0	0	9
	T7.2	2	0.25	0.25	0.25	0.25	9	0.5	1	1	14.5
	T7.3	2	0.25	0.25	0.25	0.25	9	0.25	1	1	14.25
	T7.4	7	0	0	0	0	5	0	0	0	12
	T7.5	1	0.5	0.5	0.5	0.5	9	0.25	1	1	14.25
	Total	**13**	**1**	**1**	**1**	**1**	**32**	**9**	**3**	**3**	**64**
	RP1	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**T**
	T7.1	0.57	0	0	0	0	0	1.20	0	0	1.77
	T7.2	1.14	0.14	0.14	0.14	0.14	5.14	0.10	0.57	0.57	8.10
	T7.3	1.14	0.14	0.14	0.14	0.14	5.14	0.10	0.57	0.57	8.10
	T7.4	4	0	0	0	0	2.86	0	0	0	6.86
	T7.5	0.57	0.29	0.29	0.29	0.29	5.14	0.10	0.57	0.57	8.10
	Total	**7.43**	**0.57**	**0.57**	**0.57**	**0.57**	**18.29**	**1.50**	**1.71**	**1.71**	**32.93**
	RP2	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**T**
	T7.1	0.43	0	0	0	0	0	6.80	0	0	7.23
	T7.2	0.86	0.11	0.11	0.11	0.11	3.86	0.40	0.43	0.43	6.40
	T7.3	0.86	0.11	0.11	0.11	0.11	3.86	0.15	0.43	0.43	6.15
	T7.4	3	0	0	0	0	2.14	0	0	0	5.14
	T7.5	0.43	0.21	0.21	0.21	0.21	3.86	0.15	0.43	0.43	6.15
	Total	**5.57**	**0.43**	**0.43**	**0.43**	**0.43**	**13.71**	**7.50**	**1.29**	**1.29**	**31.07**

ID	Description	Lead	Participants	Depends	Start	Due
D7.1	Report on technical feasibility study for process technologies (I)	7	1, 4	T7.1	-	20
D7.2	Report on technical feasibility study for process technologies (II)	7	1, 4	T7.1	-	30
D7.3	Economic feasibility report including CAPEX and OPEX quantification (I)	6	1, 2, 3, 4, 5, 7, 8, 9	T7.2	-	24
D7.4	Economic feasibility report including CAPEX and OPEX quantification (II)	6	1, 2, 3, 4, 5, 7, 8, 9	T7.2	-	36
D7.5	Environmental validation including a Life Cycle Assessment (I)	6	1, 2, 3, 4, 5, 7, 8, 9	T7.3	-	22
D7.6	Environmental validation including a Life Cycle Assessment (II)	6	1, 2, 3, 4, 5, 7, 8, 9	T7.3	-	34
D7.7	Health and safety study	1	6	T7.4	-	32
D7.8	European and local legal and non-legal limitations, barriers and standards for	6	1, 2, 3, 4, 5, 7, 8, 9	T7.5	-	12

	VIPRISCAR products (I)					
D7.9	European and local legal and non-legal limitations, barriers and standards for VIPRISCAR products (II)	6	1, 2, 3, 4, 5, 7, 8, 9	T7.5	-	24
D7.10	European and local legal and non-legal limitations, barriers and standards for VIPRISCAR products (III)	6	1, 2, 3, 4, 5, 7, 8, 9	T7.5	-	36
D7.11	List of Key Performance Indicators	6	1, 2, 3, 4, 5, 7, 8, 9	T7.5	-	25

2.9 WP8: Exploitation, Dissemination and Communication

TABLE 2.9: WBS FOR WP8

Participant number	1	2	3	4	5	**6**	7	8	9
Short name of participant	TECNALIA	JOWAT	CIKAUTXO	B4P	AEP	**VERTECH**	EXERGY	GAIKER	LEITAT

ID	**Description**	**Lead**	**Participants**	**Depends**	**Start**	**Due**
WP8	**Exploitation, Dissemination and Communication**	**6**	**1, 2, 3, 4, 5, 7, 8, 9**	**-**	**1**	**36**
T8.1	Market intelligence and competitive analysis	6	2, 3, 4, 5	-	1	12
T8.2	Business models and financial impacts	6	2, 3, 4, 5	T7.2	12	36
T8.3	Exploitation Plan	6	1, 2, 3, 4, 5, 7, 8, 9	-	1	36
T8.4	IPR and Exploitation Risk Management	6	1, 2, 3, 4, 5, 7, 8, 9	-	1	36
T8.5	Development of the Project communication and dissemination strategy	1	2, 3, 4, 5, 6, 7, 8, 9	-	1	36

		Partner nº									
Planned Effort (PM)	**Project**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**T**
	T8.1	0	0.3	0.3	0.3	0.3	5	0	0	0	6.2
	T8.2	0	0.3	0.3	0.3	0.3	5	0	0	0	6.2
	T8.3	2	0.2	0.2	0.2	0.2	9	0.5	0.5	0.5	13.3
	T8.4	2	0.1	0.1	0.1	0.1	8	1.25	0.5	0.5	12.65
	T8.5	10	0.1	0.1	0.1	0.1	1	1.25	2	2	16.65
	Total	**14**	**1**	**1**	**1**	**1**	**28**	**3**	**3**	**3**	**55**
	RP1	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**T**
	T8.1	0	0.3	0.3	0.3	0.3	5	0	0	0	6.2
	T8.2	0	0.17	0.17	0.17	0.17	2.86	0	0	0	3.54

	T8.3	1	0.1	0.1	0.1	0.1	4.5	0.25	0.25	0.25	6.65
	T8.4	1	0.05	0.05	0.05	0.05	4	0.25	0.25	0.25	5.95
	T8.5	5	0.05	0.05	0.05	0.05	0.5	0.25	1	1	7.95
	Total	**7**	**0.67**	**0.67**	**0.67**	**0.67**	**16.86**	**0.75**	**1.5**	**1.5**	**30.29**
	RP2	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**T**
	T8.1	0	0	0	0	0	0	0	0	0	0
	T8.2	0	0.13	0.13	0.13	0.13	2.14	0	0	0	2.66
	T8.3	1	0.1	0.1	0.1	0.1	4.5	0.25	0.25	0.25	6.65
	T8.4	1	0.05	0.05	0.05	0.05	4	1	0.25	0.25	6.7
	T8.5	5	0.05	0.05	0.05	0.05	0.5	1	1	1	8.7
	Total	**7**	**0.33**	**0.33**	**0.33**	**0.33**	**11.14**	**2.25**	**1.5**	**1.5**	**24.71**

ID	Description	Lead	Participants	Depends	Start	Due
D8.1	Market analysis for VIPRISCAR innovations	6	2, 3, 4, 5	T8.1	-	12
D8.2	Business plan (I)	6	2, 3, 4, 5	T8.1, T8.2	-	24
D8.3	Business plan (II)	6	2, 3, 4, 5	T8.1, T8.2	-	36
D8.4	Data management plan (I)	6	1, 2, 3, 4, 5, 7, 8, 9	T8.3	-	6
D8.5	Data management plan (II)	6	1, 2, 3, 4, 5, 7, 8, 9	T8.3	-	24
D8.6	Data management plan (III)	6	1, 2, 3, 4, 5, 7, 8, 9	T8.3	-	36
D8.7	Exploitation plan (I)	6	1, 2, 3, 4, 5, 7, 8, 9	T8.3, T8.4	-	6
D8.8	Exploitation plan (II)	6	1, 2, 3, 4, 5, 7, 8, 9	T8.3, T8.4	-	12
D8.9	Exploitation plan (III)	6	1, 2, 3, 4, 5, 7, 8, 9	T8.3, T8.4	-	24
D8.10	Exploitation plan (IV)	6	1, 2, 3, 4, 5, 7, 8, 9	T8.3, T8.4	-	36
D8.11	Dissemination and communication plan (I)	1	2, 3, 4, 5, 6, 7, 8, 9	T8.5	-	6
D8.12	Dissemination and communication plan (II)	1	2, 3, 4, 5, 6, 7, 8, 9	T8.5	-	12
D8.13	Dissemination and communication plan (III)	1	2, 3, 4, 5, 6, 7, 8, 9	T8.5	-	24
D8.14	Dissemination and communication plan (IV)	1	2, 3, 4, 5, 6, 7, 8, 9	T8.5	-	36
D8.15	Project public website	1	2, 3, 4, 5, 6, 7, 8, 9	T8.5	-	4

2.10 WP9: Ethics Requirement

TABLE 2.10: WBS FOR WP9

Participant number	**1**	2	3	4	5	6	7	8	9
Short name of participant	**TECNALIA**	JOWAT	CIKAUTXO	B4P	AEP	VERTECH	EXERGY	GAIKER	LEITAT

ID	Description	Lead	Participants	Depends	Start	Due
D9.1	A - Requirement No. 1	1	2, 3, 4, 5, 6, 7, 8, 9	-	-	6
D9.2	EPQ - Requirement No. 2	1	2, 3, 4, 5, 6, 7, 8, 9	-	-	1

3. GRAPHICAL PRESENTATION OF TASKS INTERDEPENDENCIES

The Figure 3.1 graphically summarises the inter-relationships among the different project tasks presented in the sections before.

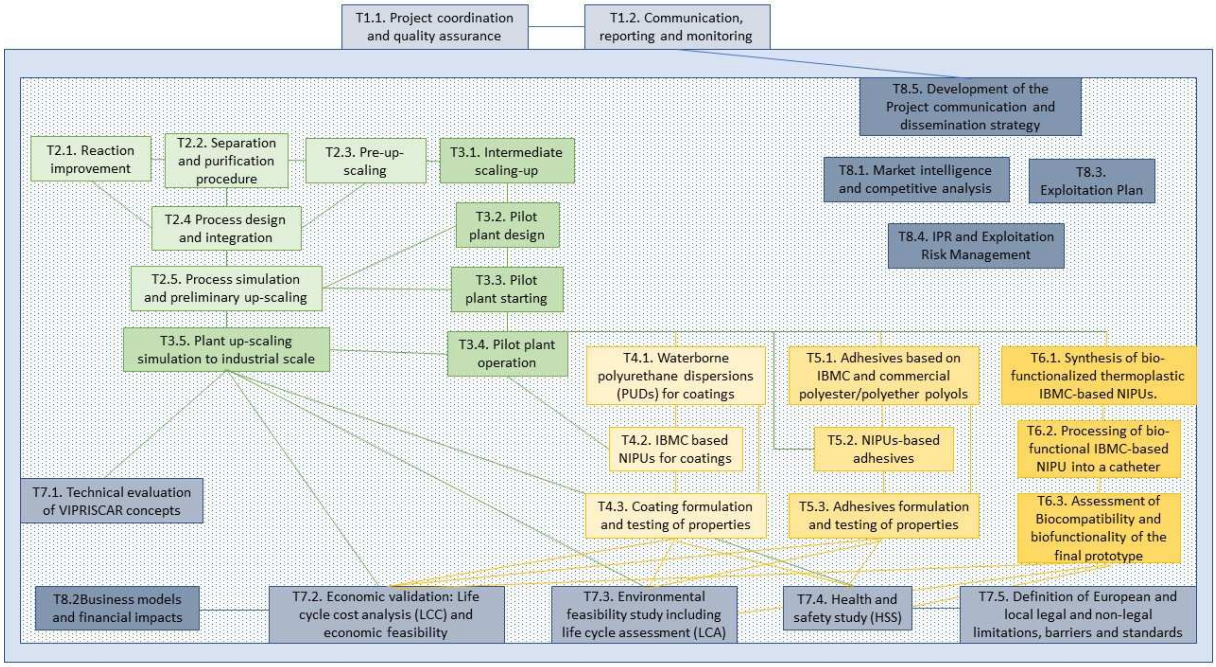


FIGURE 3.1: TASK INTERDEPENDENCIES

4. SCHEDULE MANAGEMENT

The project schedule will be managed through success criteria, milestones and periodic control mechanisms.

4.1 PROJECT SUCCESS CRITERIA

A set of success criteria have been defined per deliverable and Work Package as it is shown in Table

TABLE 4.1: PROJECT SUCCESS CRITERIA

WP	Success indicator	Deliverable
1	First version of the Quality Assurance Plan documented	D1.1
1	The Quality Assurance Plan revised	D1.2
1	The Quality Assurance Plan revised	D1.3
1	Definitive version of the Quality Assurance Plan	D1.4
1	First version of the Project Management Plan available	D1.5
1	Project Management Plan updated	D1.6
1	Project Management Plan updated	D1.7
1	Definitive version of the Project Management Plan	D1.8
2	Intermediate results of the IBMC process development documented	D2.1
2	IBMC process development. Lab Technology Manual available	D2.2
2	Process simulation and preliminary up-scaling completed	D2.3
3	Report confirming validation and giving adaptation/investment strategy for the IBMC pilot process	D3.1
3	Protocol for IBMC process that has proven to result in the first 100-kg	D3.2
3	Plant up-scaling simulation completed	D3.3
4	Documented preparation of polyurethane dispersions (PUDs) with IBMC functional oligomers for coating formulation.	D4.1
4	IBMC derived NIPUs with amino terminal groups available	D4.2
4	IBMC based coatings form POUDs and NIPUS available	D4.3
5	Results documented.	D5.1

5	50 g of polycarbonate polyols have been produced and characterized. Report is available.	D5.2
5	First NIPUs are available.	D5.3
5	2 kg raw materials for adhesive formulation has been delivered to JOWAT. Report is available.	D5.4
5	Final formulation of NIPUs are available.	D5.5
5	Adhesive formulations are developed and characterized.	D5.6
6	IBMC-based biofunctionalized NIPU synthetized	D6.1
6	A proof if principle catheter of IBCM-based NIPU processed	D6.2
6	The biocompatibility and bifunctionality of the final prototype evaluated.	D6.3
7	Preliminary technical feasibility study completed	D7.1
7	Technical feasibility study completed	D7.2
7	Preliminary economic feasibility study, including the Life Cycle Costing (LCC) methodology definition and screening analysis	D7.3
7	Final economic feasibility analysis, including LCC results (CAPEX and OPEX quantification)	D7.4
7	Preliminary environmental study, including the Life Cycle Assessment (LCA) methodology and screening analysis	D7.5
7	Final environmental assessment, including LCA results	D7.6
7	The health and safety study finished	D7.7
7	First screening of European and local legal and non-legal limitations, barriers and standards identification	D7.8
7	Update of the European and local legal and non-legal limitations, barriers and standards, validation from partners involved	D7.9
7	Final analysis of the European and local legal and non-legal limitations, barriers and standards for VIPRISCAR products	D7.10
7	Full list of Key Performance Indicators corresponding to the WP7 (technical, economic, environmental and health & safety aspects)	D7.11
8	Market analysis available	D8.1
8	First version of the Business plan of commercial KERs documented	D8.2

8	Final version of the Business plan of commercial KERs available	D8.3
8	First version of the Data management plan documented	D8.4
8	Second version of the Data management plan updated	D8.5
8	Final version of the Data management plan available	D8.6
8	First version of the exploitation plan documented	D8.7
8	Second version of the exploitation plan updated	D8.8
8	Third version of the exploitation plan updated	D8.9
8	Final version of the exploitation plan available	D8.10
8	Full version of the dissemination and communication plan available	D8.11
8	Assessment of the dissemination and communication activities deployed in the first year	D8.12
8	Assessment of the dissemination and communication activities deployed in the second year	D8.13
8	Assessment of the dissemination and communication activities deployed in the third year	D8.14
8	Website operational with initial contents	D8.15
9	Authorisations for the realization of experiments obtained	D9.1
9	Authorisations for relevant facilities obtained	D9.2

4.2 MILESTONES

The Table 4.2 list the significant milestones in the project, their timing and the means of verification. TECNALIA will be responsible to track progress to milestone achievement.

TABLE 4.2: PROJECT MILESTONES

Milestone	Milestone name	Related WP(s)	Due date	Means of verification
MS1	Production of 1 kg of IBMC	2	12	1 kg of IBMC obtained at lab scale
MS2	100 kg of IBMC produces + Positive preliminary technical and economic study + Positive	3, 7	24	At least 100 kg of IBMC produced at PP scale + Reports

	preliminary environmental feasibility and health study			
MS3	At least 1 IBMC-based polymer shows preliminary suitable behaviour for one of the applications	4, 5, 6	27	Report

4.3 CONTROL MECHANISMS

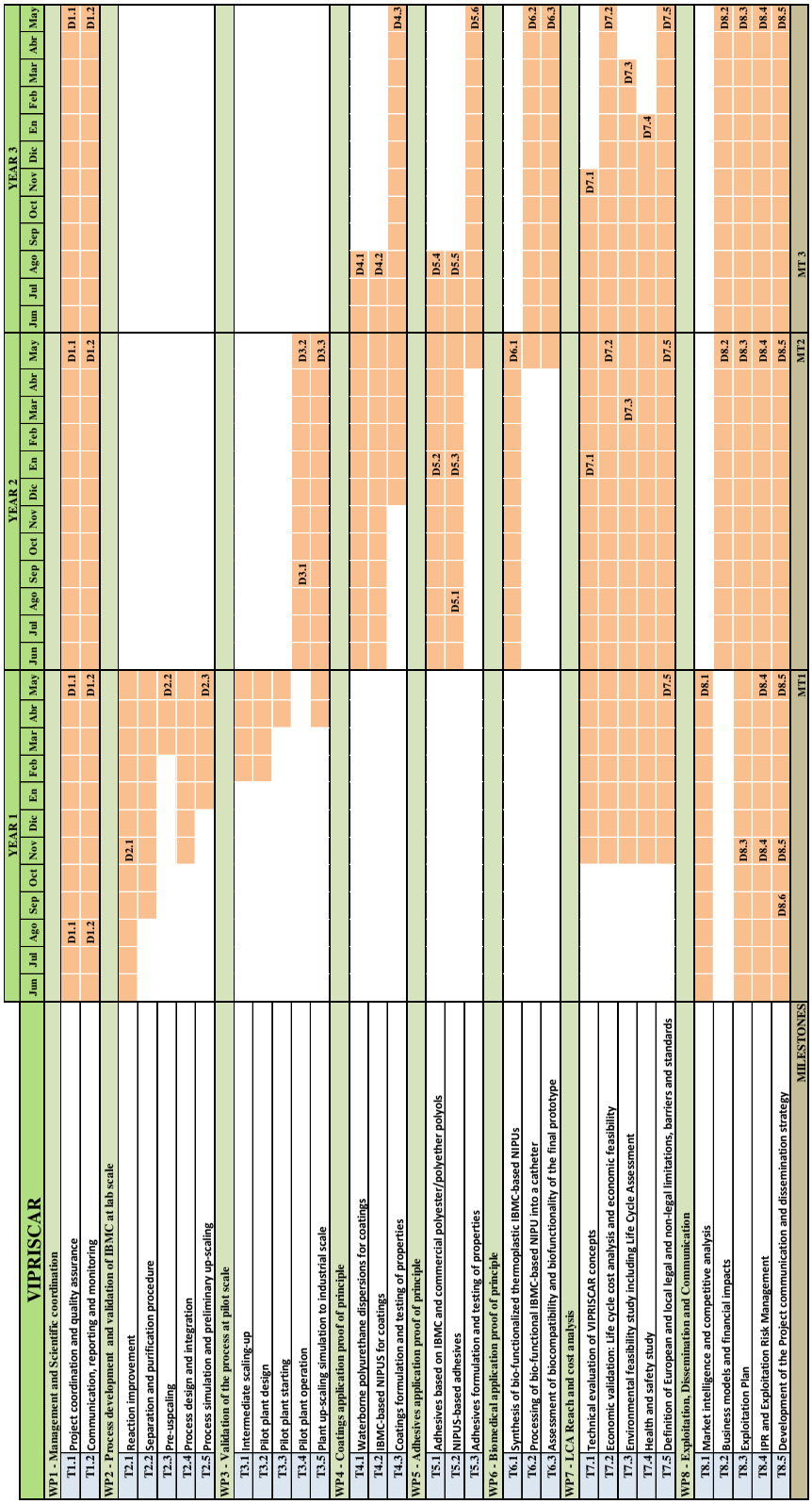
The actual schedule performance will be compared to planned performance in order to implement corrective action when actual performance deviates from planned or required performance.

The Project Management Plan will be updated three times during the project execution (at Months 12, 24 and 36).

Furthermore, Work Package and Tasks Leaders will be responsible of reporting on their activities at every Project Steering Committee meeting (every 6 months) in order to allow project progress to be tracked seamlessly.

The actual Gantt Chart will then reflect progress achieved and agreement of the revised schedule, if necessary.

ANNEX I: VIPRISCAR GANTT CHART



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