


**ANNUAL REPORT  
FOR THE ENVIRONMENTAL MANAGEMENT AND IMPLEMENTATION OF  
ENVIRONMENTAL TERMS DURING  
OPERATION AND MAINTENANCE OF CONCESSION PROJECT**

**PROJECT: “DESIGN - CONSTRUCTION - FINANCING - OPERATION - MAINTENANCE  
AND EXPLOITATION OF THE PROJECT  
IONIA ODOS MOTORWAY FROM ANTIRRIO TO IOANNINA,  
PATHE ATHENS (METAMORFOSI I/C) – MALIAKOS (SKARFEIA) AND  
CONNECTING BRANCH OF PATHE SCHIMATARI - CHALKIDA”**



Date	31.01.2021
Created by:	Concessionaire 

**REFERENCE PERIOD  
YEAR 2020**

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## 1. INTRODUCTION

This Environmental Management Report outlines the company's, NEA ODOS S.A., Environmental Management Processes during the operation and maintenance of the Concession Project for the year 2020 (01.01.2020 to 31.12.2020). This Report also includes the reference data on compliance with the environmental terms during the 2nd semester of 2020.

The implementing of a program to monitor the environmental impact for the NEA ODOS S.A., apart from its enforcement by the environmental terms of the project, is done in such a way that it has multiple beneficial nature to the man-made and the natural environment of the areas of influence, as well as to serve in the best possible way the users, where the **PATHE Motorway, Metamorfoosi – Skarfeia Section 172 km**, and the **IONIA ODOS “Antirrio – Ioannina” of 196 km length** passes.



The monitoring of environmental and social parameters is done in such a way that enables early recognition of harmful tendencies and permits the reduction and/or elimination of the negative effects, by intervening with suitable protective measures. Additionally, the constant monitoring enables the effectiveness assessment of the proposed protection measures, so that the protection of the affected by the operation and the maintenance of the motorway environmental parameters is ensured over time. The diligent collection and recording of qualitative and quantitative evidence during constant E.T. monitoring also aims to promote further awareness on the impacts that the construction of such projects may have on similar environments.

At the PATHE motorway, section “Metamorfoosi – Skarfeia”, and at the IONIA ODOS MOTORWAY “Antirrio – Ioannina”, a comprehensive environmental monitoring program is implemented, through which all Environmental Terms are met, as detailed below.

## 2. PROJECT DESCRIPTION

### 2.1 PATHE Motorway

**State :** Hellenic Republic

**Concessionaire :** NEA ODOS S.A.

**Motorway :** PATHE

**Section :** Metamorfossi – Skarfeia



The PATHE motorway at the **section Metamorfossi – Skarfeia** includes:

#### 1. 30 (thirty) Junctions

- Metamorfossi I/C near K.P. 15+500
- Tatoi I/C K.P. near 17+00
- Pyna I/C K.P. near 19+000
- Kalyftaki I/C near K.P. 20+000
- Varympompi I/C near K.P. 23+000
- Mpogiati I/C near K.P. 28+000
- Afidnes I/C near K.P. 34+000
- Kapandriti I/C near K.P. 35+000
- Markopoulo I/C near K.P. 39+500
- Malakassa I/C near K.P. 44+000
- Oinofyta I/C near K.P. 56+000
- Oinoi I/C-1st branch near K.P. 63+00
- Chalkida I/C near K.P. 66+000
- Half-junction Schimatari A near K.P. 66+500
- Half-junction Schimatari B near K.P. 67+500
- Ritsona I/C near K.P. 75+500
- Thebes I/C near K.P. 90+000
- Camp I/C near K.P. 100+500
- Akraifnio I/C near K.P. 107+500
- Kastro I/C near K.P. 115+00
- Martino I/C near K.P. 126+000
- Malesina I/C near K.P. 129+000
- Tragana I/C near K.P. 137+500
- Atalanti I/C near K.P. 145+500
- Livanates I/C near K.P. 149+500
- Arkitsa I/C near K.P. 154+500
- Loggos I/C near K.P. 166+000
- Latomeio I/C near K.P. 172+500
- Half-junction K. Vourla (East) near K.P. 177+500
- Half-junction K. Vourla (West) near K.P. 180+000



## 2. 3 (three) Frontal & 10 (ten) Lateral Toll Stations

### i. Frontal

- Afidnes near K.P. 32+500
- Thebes near K.P. 96+00
- Tragana near K.P. 135+500

### ii. Lateral

- 2 on the Kapandriti I/C near K.P. 35+500
- 2 on the Malakassa I/C near K.P. 44+000
- 2 on the Oinofyta I/C near K.P. 55+500
- 2 on the Thebes I/C near K.P. 90+000
- 2 on the Tragana I/C near K.P. 137+500



## 3. 5 (five) Motorists Service Stations

- Varympompi MSS (to Athens) near K.P. 24+500
- Kapanditi MSS (to Lamia) near K.P. 36+500
- Malakasa MSS (Bilaterally) near K.P. 48+000
- Schimatari MSS (Bilaterally) near K.P. 70+500
- Atalanti MSS (Bilaterally) near K.P. 144+000



## 4. 13 (thirteen) Temporary Parking Areas with WC facilities

- Parking Area (towards Athens) near K.P. 38+500
- Parking Area (towards Athens) near K.P. 64+000
- Parking Area (towards Lamia) near K.P. 64+000
- Parking Area (towards Lamia) near K.P. 83+500
- Parking Area (towards Athens) near K.P. 84+500
- Parking Area (towards Lamia) near K.P. 98+000
- Parking Area (towards Athens) near K.P. 98+500
- Parking Area (towards Lamia) near K.P. 110+500
- Parking Area (towards Athens) near K.P. 113+500
- Parking Area (towards Lamia) near K.P. 131+000
- Parking Area (towards Athens) near K.P. 134+000
- Parking Area (towards Athens) near K.P. 141+500



- Parking Area (towards Lamia) near K.P. 142+500

#### 5. **8 (Eight) Winter Maintenance Stations**

- Varympompi SCS near K.P. 24+500
- Markopoulo SCS near K.P. 38+500
- Schimatari SCS near K.P. 63+500
- Thebes SCS near K.P. 90+000
- Akraifnio SCS near K.P. 107+500
- Martino SCS near K.P. 126+000
- Tragana SCS near K.P. 135+500
- Latomeio SCS near K.P. 173+500



#### 6. **6 (six) Tunnels**

- Near K.P. 168+500 to near K.P. 169+500 (Bilaterally)
- Near K.P. 173+500 to near K.P. 176+000 (Bilaterally)
- Near K.P. 176+000 to near K.P. 176+500 (Bilaterally)



#### 7. **Other support facilities for the operation of the motorway**

- Administration building near K.P. 23+000
- Customer service building and Parking Areas on the site of Afidnes toll station K.P. 32+355
- Police building near K.P. 32+500
- Markopoulo MCC (Maintenance Buildings) near K.P. 38+500
- Thebes MCC (Maintenance, Fire-fighting and Police Buildings) near K.P. 90+000
- Schimatari Traffic Management Center (TMC) near K.P. 63+500
- Atalanti MCC (Maintenance, Fire-fighting and Police Buildings) near K.P. 145+500
- Tunnel Control Center near K.P. 176+000

The sections of the Concession Contract Project are divided in seven (7) Geographical Units (GU).

S/N	SECTION	Km
1	Metamorfosi – Yliki Section	80.366
2	Yliki – Kastro Section	20.712
3	Kastro – Tragana Section	20.383
4	Tragana – Arkitsa Section	18.77
5	Arkitsa – Agios Konstantinos Section	10.37
6	Agios Konstantinos – Kamena Vourla Section	16.11

7	Kamena Vourla – Mendenitsa (Skarfeia) Section	3.74
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## 2.2 IONIA ODOS Motorway

**State:** Hellenic Republic

**Concessionaire:** NEA ODOS S.A.

**Motorway:** IONIA ODOS

**Section:** Antirrio – Ioannina

Ionias Odos includes:

### 1. 19 Junctions

- Antirrio I/C on near K.P. 5+500
- Gavrolimni I/C on near K.P. 18+500
- Evinochori half-junction on near K.P. 27+500
- Messolonghi I/C near K.P. 32+000
- Agrinio (South) I/C near K.P. 51+500
- Ag. Iliia I/C on near K.P. 55+500
- Aggelokastro I/C on near K.P. 60+000
- Rigani I/C on near K.P. 65+000
- Agrinio (North) I/C near K.P. 81+000
- Preveza I/C on near K.P. 89+500
- Amfilochia I/C on near K.P. 106+000
- Kompoti half-junction on near K.P. 130+500
- Arta I/C on near K.P. 141+000
- Filippiada I/C on near K.P. 153+000
- Ammotopos half-junction on near K.P. 160+000
- Gorgomylos I/C on near K.P. 168+500
- Terovo I/C on near K.P. 181+500
- Avgo I/C on near K.P. 192+500
- Egnatia I/C on near K.P. 201+000



### 2. 4 Frontal & 10 Lateral Toll Stations

**a. Frontal:**

- Klokova near K.P. 15+500
- Aggelokastro near K.P. 61+500
- Menidi near K.P. 116+00
- Terovo near K.P. 180+000

**b. Lateral:**

- 2 on Gavrolimni I/C near K.P. 18+500
- 2 on Messolonghi I/C near K.P. 32+00
- 2 on Agrinio I/C near K.P. 81+000
- 2 on Arta I/C near K.P. 141+000
- 2 on Gorgomylos I/C near K.P. 168+500



**3. 9 Motorists Service Stations**

- On Evinochori I/C near K.P. 27+000 (bilaterally)
- On Amvrakia near K.P. 86+000 (bilaterally)
- On Amfilochia near K.P. 100+500 (to Ioannina)
- On Filippiada near K.P. 154+000 (bilaterally)
- On Episkopiko near K.P. 195+000 (bilaterally)



**4. Other support facilities for the operation of the motorway (MCC – Maintenance Control Center, TMC – Traffic Management Center)**

- Klokova TMC near K.P. 15+500
- Messolonghi MCC near K.P. 31+500
- Amfilochia MCC near K.P. 100+500
- Filippiada MCC near K.P. 154+000
- Episkopiko TMC near K.P. 195+000



**5. 4 Tunnels**

- Makyneia Tunnel, 500 m length near K.P. 9+100
- Klokova Tunnel, 2,890 m length near K.P. 11+500
- Kalydona Tunnel, 1,230 m length near K.P. 28+500
- Ampelia Tunnel, 870 m length near K.P. 197+500



**6. Bridges**

- Makyneia Bridge, 67.5 (r) & 102 m (l) near K.P. 9+000

- Evinos River Bridge, 254 (r) & 259 m (l) near K.P. 23+500
- Xirorema Bridge, near K.P. 105+500
- Krikelo Bridge, 97 m length near K.P. 111+000
- Menidi Bridge, 554 m length near K.P. 123+500
- Gymnotopos Bridge, 253 m length near K.P. 163+500
- Bridge near K.P. 168+000
- Tsagkaropoulos Bridge, 440 m length near K.P. 172+000
- Bridge 105 m length near K.P. 173+000
- Kryfovos Bridge, 280 m length near K.P. 189+000



**7. 4 Winter Maintenance Stations (SCS)**

- Messolonghi SCS near K.P. 31+500
- Amfilochia SCS near K.P. 100+500
- Filippiada SCS near K.P. 154+000
- Terovo SCS near K.P. 195+000

The sections of the Project are divided in five (5) Geographical Units (GU), in accordance with the approved Environmental Terms of the project.

S/N	SECTION	Km
1	Antirrio – Kefalovryssos Section (South Agrinio Bypass End)	42,66
2	Agrinio Bypass Section	32,77
3	North Agrinio Bypass End (Kouvaras) – South Arta Bypass End (Kompoti)	53,36
4	Arta Bypass Section	16,05
5	North Arta Bypass End (Filippiada) - Ioannina (Eleousa)	50,30

### 3. SUPERVISORY SERVICES (PROJECT IMPLEMENTERS)

The Supervisory Services of the Concession Project are:

- Special Service for Public Works / Construction of Transportation Projects with Concession Contract (EYDE/KSESP), 5 Karystou St., 115 23, Athens, Supervisor Mr. Z. Karvounis.
- Directorate D17, Directorate of Infrastructure Operation, Maintenance & Exploitation with Concession Contract, 70 Panormou St., 115 23, Athens, Deputy Supervisor Ms. S. Chouliara.

**Concessionaire:** NEA ODOS S.A.

**Motorway:** PATHE (Metamorfossi – Skarfeia) & IONIA ODOS

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**4 ENVIRONMENTAL AUTHORIZATION**  
**4.1 JMD ETA and their validity – Present Situation**  
**4.1.1 PATHE (METAMORFOSSI – SKARFEIA)**

The per-section validity period of the approved environmental terms for the PATHE section Metamorfosi – Skarfeia as well as the authorizations issued are presented in the following table:

S/N	Section	E.T. Validity	Authorizations issued
1	Metamorfosi – Yliki Section	The section ETAD is valid until 17-09-2028 (Decision G.S.P.P. DIPA 61030/17.09.2018)	No EYPE 113451/21-12-2001 exemption from ETA to address landslide at Malakasa <b>JMD No 126119/08-02-2007, E.T. Approval</b> No EYPE 144265/22-09-2009 E.T. amendment No 143730/10-11-2009, Approval of noise protection measures. No EYPE 141083/20-10-2009 Construction and operation of MCC at Kapandriti and Thebes approval No EYPE 196674/25-02-2011 Evaluation of environmental variations by the construction and operation of the administration building at Varympompi. No DIPA 151044/03.08.2015 TEPEM approval for the general administration building of PATHE at Varympompi (K.P. 18+600). No DIPA 151494/29.10.2015 TEPEM approval for the relocation of the maintenance building from Kapandriti MCC to Malakassa area No EYPE 195827/31-01-2011 Evaluation of variations by the construction and operation of six Parking Areas. No EYPE 172045/09-04-2014 TEPEM approval for Hellenic Police’s vehicle refueling facilities at Thebes.

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		<p>No DIPA 153346/15.12.2015, TEPEM approval for the relocation of the police building from the environmentally authorized position Kapandriti MCC (K.P. 29+000) to Afidnes area.</p> <p>No DIPA 100451/30.05.2016, Evaluation of compliance documentation of at-grade I/C 1 Final Design at Malakassa I/C area.</p> <p>No DIPA 39764/24.08.2016, Evaluation of compliance documentation of Oinoi at-grade I/C (IKL1) Final Design at Oinoi I/C area.</p> <p>No EYPE 122399/1-4-2010 Construction and operation approval of Winter Maintenance stations at PATHE.</p> <p>No EYPE 195241/12-01-2011 Atmospheric pollution and meteorological data stations on the Motorway approval.</p> <ul style="list-style-type: none"> <li>• Air &amp; Noise Pollution Control (EARTH) Document: 213863/30-11-2012: Noise barrier EAMYE approval for 3rd Lyceum of Kifissia (15+426 - 15+573), and AKKV (171+316 - 171+360 and 178+604 - 178+881)</li> </ul> <p><b>No EYPE 200817/23-07-2012 E.T. amendment (side network)</b></p> <p>No EYPE 200858/25-7-2012 No need to modify the E.T. for the installation and operation of customer service building and Parking Areas on the site of Afidnes toll station.</p> <p><b>No DIPA 145495/21.01.2015 E.T. Amendment</b> about the Parking Areas, the future motorists service stations positions of the motorway and the lateral toll stations of Oinofyta.</p> <p><b>MD 1170/16-01-2018 E.T. amendment</b> for the alteration of Kifissia, Varympompi interchange (with lateral toll stations) and the lateral toll stations of Ag. Stefanos.</p> <p><b>MD 61030/1796/17-09-2018 Environmental terms renewal</b> for the Metamorfosi – Yliki, Yliki – Kastro, Kastro –Tragana and Arkitsa –Ag. Konstantinos sections of the PATHE motorway.</p>
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			<p>No YPEN/DKAPA/15969/656/21-03-2018 EAMYE approval for K.P. 21+080 to Athens.</p> <p>No 10300/6-6-2018 TEPEM approval for the Mech. Laboratories, wash – lubrication facilities at Thebes, Martino &amp; Atalanti MCC.</p> <p>No YPEN/DIPA/54395/1335/15-01-2019, Amendment of the Environmental Terms of sections for the replacement of three bridges at Ritsona, Thiva and Atalanti junctions.</p> <p>No YPEN/DIPA/31281/2108/05-11-2019, approval of Documentation for the adaptation to the requirements of the JMD 1915/2018 (B' 304) for Metamorfossi - Skarfia section of PATHE Motorway.</p> <p>No YPEN/DIPA/61255/3656/18-09-2020, Technical Environmental Study (TE.PE.M.) of the Varimpompi snow removal station (CH. 23+200)</p>
2	Yliki – Kastro	<p>The section ETAD is valid until 17-09-2028 (Decision G.S.P.P. DIPA 61030/17.09.2018)</p>	<p><b>JMD No 36118/94/10-07-1995, Approval of environmental terms</b></p> <ul style="list-style-type: none"> <li>No 101617/22-09-2006: Amendment as to the Yliki alterations (91 &amp; 97), pollutant retention tanks, and ATEMKE site restoration (for the concession)</li> </ul> <p><b>JMD No 140792/12-06-2009, E.T. amendment</b></p> <p>No 143730/10-11-2009, Approval of noise protection measures.</p> <p><b>No DIPA 145495/21.01.2015 E.T. Amendment</b> about the Parking Areas, the future motorists service stations positions of the motorway and the lateral toll stations of Oinofyta.</p> <ul style="list-style-type: none"> <li><b>MD 61030/1796/17-09-2018 Environmental terms renewal</b> for the Metamorfosi – Yliki, Yliki – Kastro, Kastro –Tragana and Arkitsa –Ag. Konstantinos sections of the PATHE motorway.</li> <li><b>No YPEN/DIPA/31281/2108/05-11-2019</b>, approval of Documentation for the adaptation to the requirements of the JMD 1915/2018 (B' 304) for Metamorfossi - Skarfia section of PATHE Motorway.</li> </ul>

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3	Kastro – Tragana Section	<p>The section ETAD is valid until 17-09-2028 (Decision G.S.P.P. DIPA 61030/17.09.2018)</p>	<p><b>JMD No 33838/94/10-7-1995 &amp; No 103909/12-05-2006, E.T. Approval</b> <b>No 139132/30-04-2009 E.T. Amendment</b> <b>No 43269/09-09-2016 DIPA, E.T. Amendment</b>, about the construction of right side road network from Malesina I/C to MC 19 on Proskyna – Theologou street. No 143730/10-11-2009, Approval of noise protection measures. No 146696/18-11-2009, Evaluation of environmental variations from the design alterations on positions of Kastro – Agios Konstantinos section of the PATHE motorway. No EYPE 122399/1-4-2010 Construction and operation approval of Winter Maintenance stations. <b>No DIPA 145495/21.01.2015 E.T. Amendment</b> about the Parking Areas, the future motorists service stations positions of the motorway and the lateral toll stations of Oinofyta. <b>MD 61030/1796/17-09-2018 Environmental terms renewal</b> for the Metamorfosi – Yliki, Yliki – Kastro, Kastro –Tragana and Arkitsa –Ag. Konstantinos sections of the PATHE motorway. No YPEN/DIPA/31281/2108/05-11-2019, approval of Documentation for the adaptation to the requirements of the JMD 1915/2018 (B’ 304) for Metamorfossi - Skarfia section of PATHE Motorway.</p>
4	Tragana – Arkitsa	<p>The section ETAD is valid until 06.02.2027 (Decision G.S.P.P. DIPA 6366/06.02.2017)</p>	<p><b>JMD No 36759/94/10-7-1995, No 103910/12-05-2006, E.T. Approval</b> No 143730/10-11-2009, Approval of noise protection measures. No 146696/18-11-2009, Evaluation of environmental variations from the design alterations on positions of Kastro – Agios Konstantinos section of the PATHE motorway. No EYPE 122399/1-4-2010 Construction and operation approval of Winter Maintenance stations.</p>

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			<p><b>No DIPA 145495/21.01.2015 E.T. Amendment</b> about the Parking Areas, the future motorists service stations positions of the motorway and the lateral toll stations of Oinofyta.</p> <p><b>Decision 6366/06.02.2017 Environmental terms renewal</b> for Tragana – Arkitsa section of PATHE motorway and amendment about the Motorists Service Station of Atalanti.</p> <p><b>No YPEN/DIPA/54395/1335/15-01-2019</b>, Amendment of the environmental terms of the sections of the replacement of three bridges at Ritsona, Thiva, Atalanti junctions.</p> <p>No YPEN/DIPA/31281/2108/05-11-2019, approval of Documentation for the adaptation to the requirements of the JMD 1915/2018 (B' 304) for Metamorfossi - Skarfia section of PATHE Motorway.</p>
5	Arkitsa – Agios Konstantinos	The AEPO of the section shall be in force until 17.09.2028 (decision GDPP/DIPA 61030/1796/17-09-2018).	<p><b>JMD No 39516/94/10-7-1995 &amp; No 103908/12-05-2006, E.T. Approval</b></p> <p>No 143730/10-11-2009, Approval of noise protection measures.</p> <p>Ministerial Decision 145538/21.01.2015 E.T. Approval Arkitsa MSS.</p> <p>No 146696/18-11-2009, Evaluation of environmental variations from the design alterations on positions of Kastro – Agios Konstantinos section of the PATHE motorway.</p> <p>No EYPE 195241/12-01-2011 Atmospheric pollution and meteorological data stations on the Motorway approval.</p> <p><b>MD 61030/1796/17-09-2018 Environmental terms renewal</b> for the Metamorfossi – Yliki, Yliki – Kastro, Kastro –Tragana and Arkitsa –Ag. Konstantinos sections of the PATHE motorway.</p> <p>No YPEN/DIPA/31281/2108/05-11-2019, approval of Documentation for the adaptation to the requirements of the JMD 1915/2018 (B' 304) for Metamorfossi - Skarfia section of PATHE Motorway.</p>

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6	Agios Konstantinos – Kamena Vourla	The AEPO of the section is in force until 17.09.2029 (Decision of GDPP/DIPA 82386/5348/17.09.2019).	JMD No 85676/30-07-2002, E.T. Approval No 143730/10-11-2009, Approval of noise protection measures. No EYPE 122399/1-4-2010 Construction and operation approval of Winter Maintenance stations. Decision GDPP/DIPA 82386/5348/17-09-2019 Renewal of environmental terms of Ag. Kon/nos – K. Vourla & environmental licensing of the foreseen Fire-fighting building at the area of Knimida. No YPEN/DIPA/31281/2108/05-11-2019, approval of Documentation for the adaptation to the requirements of the JMD 1915/2018 (B' 304) for Metamorfossi - Skarfia section of PATHE Motorway.
7	Kamena Vourla – Mendenitsa	The terms are in the process of being renewed. A study has been developed and submitted to EYDE/KSESP & D.E. (No 30440/17-06-2013) for the section E.T. renewal.	JMD No 67031/19-10-1998, E.T. Approval No 143730/10-11-2009, Approval of noise protection measures. No YPEN/DIPA/31281/2108/05-11-2019, approval of Documentation for the adaptation to the requirements of the JMD 1915/2018 (B' 304) for Metamorfossi - Skarfia section of PATHE Motorway.

#### 4.1.2 CONNECTING BRANCH OF PATHE: SCHIMATARI - CHALKIDA

S/N	Section	E.T. Validity	Authorizations issued
1	Schimatari - Chalkida	The section ETAD is valid until 01.04.2024 (Decision MD 171818/01-04-2014)	<ul style="list-style-type: none"> <li>• JMD 106530/15-03-2000: Schimatari – Chalkida section improvement</li> <li>• MD 171818/01-04-2014 New EIA of the section approval due to expiry of the original JMD ETA validity and approval of frontal toll stations at Chalkida (Vathy)</li> </ul>

#### 4.1.3 IONIA ODOS MOTORWAY (ANTIRRIO – IOANNINA)

The per-section validity period of the approved environmental terms for the **IONIA ODOS** motorway as well as the authorizations issued are presented in the following table:

S/N	Section	E.T. Validity	Authorizations issued
1	Antirrio – Kefalovryssos (South Agrinio Bypass End)	The section ETAD is valid until 18-11-2025 (Decision G.S.P.P. DIPA 149145/19.11.2015)	<p><b>JMD 142128/25-07-2005 E.T. Approval</b></p> <p><b>MD ETA 166142/13-02-2013 amendment</b> as to the road corridor alignment design of the mentioned project at Vasiliki, Evinos river and Antirrio areas as well as the micro-optimizations along the above mentioned approved project.”</p> <p><b>MD 147996/14-04-2015: Approval of Environmental Terms (ETA)</b> for project “Ionia Odos: Antirrio – Kefalovryssos (South Agrinio Bypass End)”, Kolova area from K.P. 6+163.5 to 11+827 (6+195.6 to 11+552 originally approved alignment design), and <b>Amendment</b> as to section from K.P. 5+4104.5 to 6+163.5 (5+104.5 to 6+195.6 originally approved alignment design), and K.P. 11+827 to 14+904.4 (11+552 to 14+904.4 approved alignment design).</p> <p><b>Decision 149145/19.11.2015 G.D.P.P./DIPA: extension</b> of validity period.</p> <p><b>MD ETA 8568/17-02-2017 “Amendment</b> as to the environmental authorization of the final design of Antirrio I/C and the lateral toll stations of Gavrolimni I/C and Messolonghi I/C (near K.P. 14+300 and K.P. 27+530 of IONIA ODOS respectively), and (II) amendment environmental authorization of the frontal toll station of Klokova (near K.P. 10+100 of IONIA ODOS).</p> <p><b>Decision 23650/15.05.2017 G.D.P.P/DIPA “Amendment</b> for the environmental authorization of Evinochori MSS.”</p> <p><b>Decision 1594/19-01-2018 E.T. amendment</b> as to the alterations of the final design.</p> <ul style="list-style-type: none"> <li>Decision 100769/05-02-2016: TEPEM Messolonghi and Filippiada MCC</li> </ul>

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			<ul style="list-style-type: none"> <li>Decision 23680/05.10.2016 Approval of the Technical and Environmental Study (TEPEM) for the motorway Administration and Traffic Management Building of IONIA ODOS and the Fire-fighting Building at Klokova</li> </ul>
2	Agrinio Bypass	<p>The section ETAD is valid until 01-02-2027          [Decision G.S.P.P. DIPA No 5559/01.02.2017 (Re: 153045/2015)]</p>	<p><b>JMD 84982/96/11.04.1997 Approval of Environmental Terms</b> for the construction and operation of the project “Western Greece Motorway (Ionia Odos)” at the section “Agrinio Wide Bypass – from K.P. 0+000 to K.P. 34+401 or K.P. 34+811 – to Regional Unit of Aitoloakarnania”</p> <p>JMD 105889/08.07.2008 Extension of validity of JMD 84982/96/11.04.1997.</p> <p>JMD 144713/23.09.2009: E.T. Amendment</p> <p>Decision 100391/20.01.2016 E.T. Amendment</p> <p>Decision No 5559/01.02.2017 (Re. 153045/2015) G.D.P.P./DIPA: extension of validity period.</p>
3	North Agrinio Bypass End (Kouvaras) – South Arta Bypass End (Kompoti)	<p>The section ETAD is valid until 02-03-2026          (Decision G.D.P.P./DIPA 11198/03.03.2016)</p>	<p><b>JMD 141564/25-07-2005 E.T. Approval</b></p> <p><b>JMD 167980/30.04.2013: E.T. Amendment</b></p> <p><b>Decision of DG for Dec. EYPE 174140/ 28.07.2014: E.T. Amendment</b></p> <p><b>JMD 150063/25.06.2015:</b> “E.T. Amendment as to the sections at K.P. 105+500 to 108+700, 115+720 to 120+700, 152+446 to 154+796 to 181+710 to 186+650».</p> <p><b>Decision 11198/03.03.2016 G.D.P.P./DIPA: E.T. Amendment</b> for the relocation or reconstruction of existing pylons of DEI due to involvement in the IONIA ODOS motorway under construction and Extension of validity period</p> <p><b>Decision 9443/22.02.2017</b> of DEPUTY MINISTER of ENVIRONMENT AND ENERGY: <b>E.T. Amendment</b> for the environmental authorization</p> <ul style="list-style-type: none"> <li>➤ of Amvrakia MSS (K.P. 81+150 to 81+435),</li> <li>➤ of Amfilochia MSS and MCC (K.P. 95+300 to 95+762),</li> <li>➤ of Frontal Toll Stations: of Menidi (K.P. 111+300) and Terovo (K.P. 174+100),</li> </ul>

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			<ul style="list-style-type: none"> <li>➤ of lateral toll station Gorgomylos I/C (K.P. 163+110),</li> <li>➤ of the aggregate quarry exploitation of total surface area 33,938 m2 at position TOUMPANOS of Amfilochia (K.P. 96+000),</li> <li>➤ of Episkopiko MSS and MCC (K.P. 189+378 to 189+669)</li> <li>➤ of the updated final design of the motorway to the sections from K.P. 152+446 to K.P. 162+354 and from K.P. 178+500 to K.P. 182+665.</li> </ul> <p>Decision 1592/19-01-2018 E.T. amendment as to the alterations of the final design</p> <p>Decision 100769/05-02-2016: TEPEM Messolonghi (and Filippiada) MCC</p>
4	Filippiada - Arta Bypass	The section ETAD is valid until 23-09-2024 (Decision YPEKA/EYPE no. 175041/23.09.2014)	<p><b>JMD 120756/96/03.06.1997</b>, Approval of Environmental Terms for the construction and operation of the project “Motorway Ioannina – Antirrio, section Filippiada – Arta Bypass from K.P. 60+000 to K.P. 82+000 starting at Ioannina to Preveza and Arta regional units, including a 1km section of connecting road with Arta town.</p> <p><b>JMD 132550/31.07.2003, Amendment</b> of the Joint Ministerial Decision for the Approval of the Environmental Terms for the construction and operation of the project: “Approval of Environmental Terms for the construction and operation of the project “Motorway Ioannina – Antirrio, section Filippiada – Arta Bypass from K.P. 60+000 to K.P. 82+000 starting at Ioannina to Preveza and Arta regional units, including a 1km section of connecting road with Arta town.”</p> <p><b>JMD 137938/31.12.2003, Amendment</b> of the Joint Ministerial Decision for the Approval of the Environmental Terms for the construction and operation of the project: “Approval of Environmental Terms for the construction and operation of the project “Motorway Ioannina – Antirrio, section Filippiada – Arta Bypass from K.P. 60+000 to K.P. 82+000 starting at Ioannina to Preveza and Arta regional units, including a 1km section of connecting road with Arta town.”</p>

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			<p>Decision of D.G. for the Environment of the YPEKA/EYPE (No <b>175041/ 23.09.2014</b>) <b>Amendment and renewal - extension</b> of validity period of No 120756/96/3.6.1997 JMD Approval of Environmental Terms (as amended and in force) for the construction and operation of the project: “Filippiada – Arta Bypass (from K.P. 60+000 to 82+000) of Motorway Ioannina – Antirrio, including a 1km section of connecting road with Arta town” as to the final design of the project (longitudinal section/cross section of the road, technical and hydraulic works, side road network, tolls, road safety, etc.)</p> <ul style="list-style-type: none"> <li>Decision 141631/30-06-2009: Amendment of original ETAD as to the design of the Arta I/C</li> </ul>
5	North Arta Bypass End (Filippiada) - Ioannina (Eleousa)	<p>The section ETAD is valid until 02-03-2026          (Decision G.D.P.P./YPEN no. oik. 11198/03.03.2016)</p>	<p><b>JMD 141564/25-07-2005 E.T. Approval</b>  <b>JMD 167980/30.04.2013: E.T. Amendment</b>  <b>Decision of DG for Dec. EYPE 174140/ 28.07.2014: E.T. Amendment</b>  <b>JMD 150063/25.06.2015: “E.T. Amendment</b> as to the sections at K.P. 105+500 to 108+700, 115+720 to 120+700, 152+446 to 154+796 to 181+710 to 186+650». <b>Decision 11198/03.03.2016 G.D.P.P./YPEN: E.T. Amendment</b> for the relocation or reconstruction of existing pylons of DEI due to involvement in the IONIA ODOS motorway under construction and Extension of validity period  <b>Decision 9443/22.02.2017</b> of DEPUTY MINISTER of ENVIRONMENT AND ENERGY: <b>E.T. Amendment</b> for the environmental authorization</p> <ul style="list-style-type: none"> <li>➤ of Amfilochia MSS and MCC (K.P. 95+300 to 95+762),</li> <li>➤ of Frontal Toll Stations: of Menidi (K.P. 111+300) and Terovo (K.P. 174+100),</li> <li>➤ of lateral toll station Gorgomylos I/C (K.P. 163+110),</li> <li>➤ of the aggregate quarry exploitation of total surface area 33,938 m2 at position TOUMPANOS of Amfilochia (K.P. 96+000),</li> </ul>

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			<ul style="list-style-type: none"> <li>➤ of Episkopiko MSS and MCC (K.P. 189+378 to 189+669)</li> <li>➤ of the updated final design of the motorway to the sections from K.P. 152+446 to K.P. 162+354 and from K.P. 178+500 to K.P. 182+665.</li> </ul> <p>Decision 1592/19-01-2018 E.T. amendment as to the alterations of the final design</p> <p>Decision 100769/05-02-2016: TEPEM Messolonghi and Filippiada MCC</p> <p>Decision 39059/05.10.2017: TEPEM Filippiada MSS</p>
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## 4.2 Submissions

### 1<sup>st</sup> semester of 2020

For **PATHE Motorway**, the reference period of the 1<sup>st</sup> semester of 2020, the Concessionaire submitted the following environmental studies:

- Submission of TEPEM (Technical Environmental Study), Varimpompi Winter Maintenance Station (Concessionaire to EYDE/KSESP with prot. no. 47535/20-05-2020, EYDE/KSESP to G.D.P.P./DIPA with prot. no. Φ9.18/4465/25-06-2020).
- Submission of EIS of Atalanti I/C and Livanates I/C Lateral Stations (Concessionaire to EYDE/KSESP with prot. no. 47295/27-02-2020, EYDE/KSESP to G.D.P.P./DIPA with prot. no. Φ9.18/4765/06-07-2020).

For **IONIA ODOS Motorway**, the reference period of A' semester of 2020, the Concessionaire submitted the following environmental studies:

- Amendment Folder of JMD 141564/25-07-2005 as amended and in force as regards the Terovo Winter Maintenance Station (Section: North End of Agrinio Bypass (Kouvaras) – South End of Arta Bypass (Kompoti) and North End of Arta Bypass (Filippiada) – Ioannina (Eleousa) [Concessionaire to EYDE/KSEPS with prot. no. 47235/20-02-2020, EYDE/KSEPS to G.D.P.P./DIPA with prot. no. Φ9/18/4464/25-06-2020).

### B' semester of 2020

For **PATHE Motorway**, the reference period of B' semester of 2020, the Concessionaire submitted the following environmental studies referring to the Operation & Maintenance of the Concession Project.

For **Ionia Odos Motorway**, the reference period of B' semester of 2020, the Concessionaire submitted the following environmental studies:

- Environmental Impact Study (EIS) regarding the improvement of Kompoti semi-I/C of Ionia Odos and the amendment of AEPO with prot. no.: 141564/25-07-2005: "Ionia Odos: North End of Agrinio Bypass (Kouvaras) – South End of Arta Bypass (Kompoti) and North End of Arta Bypass (Filippiada) – Ioannina (Eleousa)" as amended and in force, (Concessionaire to EYDE/KSESP with prot. no. 48537/15.12.2020, EYDE/KSESP to G.D.P.P./DIPA with prot. no. EYDE/KSESP/Γ/Φ9.18/141055/24.12.2020).

#### 4.3 Outstanding issues

##### 4.3.1 PATHE Motorway

The environmental studies that have been submitted up to the reference year of the present report for the section Metamorfossi – Skarfeia of the PATHE and the E.T. issuance is not yet completed are presented in the following table.

S/N	Section	Outstanding issues	Submissions	Observations
1	Metamorfossi – Yliki	EIS for the amendment of the approved environmental conditions (JMD 126119/8-2-2007), as amended, renewed and in force with the addition of temporary works at the junction of Eleon and Ermioni streets, in the area of Adames of the Municipality of Kifissia	<ul style="list-style-type: none"> <li>• Submission of Nea Odos S.A. to EYDE/KSESP with prot. no. 46265/08-07-2019</li> <li>• Submission EYDE/KSESP to GGDP/DIPA with prot. no. EYDE/KSESP/Γ/Φ9.18/6073/01-08-2019.</li> </ul>	<b>Approval of DIPA is pending.</b>
3	Kamena Vourla – Mendenitsa (Skarfeia)	Renewal of the E.T. of the section.	<ul style="list-style-type: none"> <li>• Submission of Nea Odos S.A. to EYDE/EPK &amp; D.E. with prot. no. No 30440/17-06-2013).</li> <li>• Submission of EYDE/EPK &amp; D.E. to DIPA/YPEN with prot. no. A/1/00b/06/24/19689/1-7-2013.</li> </ul>	<b>Approval of DIPA is pending.</b>

#### 4.3.2 IONIA ODOS Motorway

The environmental studies that have been submitted up to the reference year of the present report for the section Antirrio – Ioannina of the IONIA ODOS and the E.T. issuance is not yet completed are presented in the following table.

S/N	Section	Outstanding issues	Submissions	Observations
1	Antirrio – Kefalovryssos (south end of Agrinio bypass)	Amendment Folder of JMD EIA 142128/25-07-2005 and MD 147996/14-04-2015, as amended and in force regarding the required flood protection works and interventions along Ionia Odos motorway	<ul style="list-style-type: none"> <li>Submission of Nea Odos S.A. to EYDE/KSESP with prot. No 45308/29-10-2018.</li> <li>Submission to EYDE/KSESP to DIPA/YPEN with prot. no. EYDE/KSESP/Γ/Φ9.18/7999/31-10-2018.</li> </ul>	<b>Approval of DIPA is pending.</b>
2	North Agrinio Bypass End (Kouvaras) – South Arta Bypass End (Kompoti) and North Arta Bypass End (Filippiada) – Ioannina (Eleousa)	Amendment Folder of EIS 141564/25-07-2005 and MD 147996/14-04-2015, as amended and in force regarding the required flood protection works and interventions along Ionia Odos motorway	<ul style="list-style-type: none"> <li>Submission of Nea Odos S.A. to EYDE/KSESP with prot. No 45307/29-10-2018.</li> <li>Submission to EYDE/KSESP to DIPA/YPEN with prot. no. EYDE/KSESP/Γ/Φ9.18/7998/31-10-2018.</li> </ul>	<b>Approval of DIPA is pending.</b>
3		EIS for the amendment of the approved environmental conditions (JMD prot. no. 141564/25-07-2005), as in force, regarding the design of the Kompoti semi-I/C	<ul style="list-style-type: none"> <li>Submission of Nea Odos S.A. to EYDE/KSESP with prot. No. 46977/30-12-2019.</li> <li>EYDE/KSESP submission to DIPA/YPEN with prot. no. EYDE/KSESP/Γ/Φ9.18/866/04-02-2020</li> <li>New EIS was submitted by Nea Odos S.A. to EYDE/KSESP with prot. no. 48537/15.12.2020 and was forwarded by EYDE/KSESP to DIPA/YPEN with prot. no. EYDE/KSESP/Γ/Φ9.18/141055/24.12.2020</li> </ul>	<p><b>With the YΠEN/DIPA prot. no. 16965/842/06.07.2020 submitted to EYDE/KSESP, the Folder was given back for EIS re-submission</b></p> <p><b>New EIS approval by DIPA is pending.</b></p>
4	Agrinio Bypass (Kefalovryssos – Chryssovergi)	Amendment Folder of JMD EPO 141564/25-07-2005 and MD 147996/14-04-2015, as amended and in force regarding the required	<ul style="list-style-type: none"> <li>Submission of Nea Odos S.A. to EYDE/KSESP with prot. No 45444/03-12-2018.</li> <li>Submission to EYDE/KSESP to DIPA/YPEN with prot. no. EYDE/KSESP/Γ/Φ9.18/612/25-01-2019.</li> </ul>	<b>Approval of DIPA is pending.</b>

		flood protection works and interventions along Ionia Odos motorway		
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## 5. SENSITIVE AREAS OF THE PROJECT

### 5.1 PATHE Motorway

The following table presents the natural areas under protection that the motorway passes through or is adjacent to, according to the approved E.T.

S/N:	Section	Ecologically Sensitive Areas
1	Yliki – Kastro Section	<ul style="list-style-type: none"> <li>GR 2410001 «Yliki and Paralimni Lakes – Voiotikos Kifissos System»</li> </ul>
2	Kastro – Tragana Section	<ul style="list-style-type: none"> <li>GR 2410001 «Yliki and Paralimni Lakes – Voiotikos Kifissos System»</li> </ul>
3	Tragana – Arkitsa Section	<ul style="list-style-type: none"> <li>GR 2440001 “Wetland and islands of Atalanti Bay”</li> </ul>
4	Agios Konstantinos – Kamena Vourla Section	<ul style="list-style-type: none"> <li>GR 2440002 «Spercheios valley and estuary»</li> </ul>

### 5.2 IONIA ODOS Motorway

The following table presents the natural areas under protection that the motorway passes through or is adjacent to, according to the approved E.T.

S/N:	Section	Ecologically Sensitive Areas
1	Antirrio – Kefalovryssos (South Agrinio Bypass End)	<ul style="list-style-type: none"> <li>GR2310001 “Acheloos Delta, Messolonghi – Aitoliko Lagoon, estuary of River Evinos, Echinades Islands, Petalas Island”</li> <li>GR2310005 “Mount Varassova”</li> <li>GR2310010 “Mount Arakynthos and the Strait of Kleisoura”</li> </ul>
2	Agrinio Bypass	<ul style="list-style-type: none"> <li>GR2310008 “Ozeros Lake”</li> <li>GR2310001 “Acheloos Delta, Messolonghi – Aitoliko Lagoon, estuary of River Evinos, Echinades Islands, Petalas Island”</li> </ul>
3	North Agrinio Bypass End (Kouvaras) – South Arta Bypass End (Kompoti)	<ul style="list-style-type: none"> <li>GR2310007 “Amvrakia Lake area”,</li> <li>GR2110004 “Amvrakikos Gulf, Katafourko Lagoon and Korakonissia”</li> <li>AB3090025 «Louros River»</li> </ul>
4	Arta Bypass	<ul style="list-style-type: none"> <li>Rivers Arachthos and Louros</li> </ul>
5	North Arta Bypass End (Filippiada) - Ioannina (Eleousa)	<ul style="list-style-type: none"> <li>GR2310007 “Amvrakia Lake area”,</li> <li>GR2110004 “Amvrakikos Gulf, Katafourko Lagoon and Korakonissia”</li> <li>AB3090025 «Louros River»</li> <li>GR2130012 “Broader area of Ioannina lake”</li> </ul>

## **6. ATMOSPHERIC POLLUTION**

### **6.1 PATHE Motorway**

According to the Environmental Terms of PATHE motorway the air pollution measurement network for PATHE motorway includes 3 measuring stations: at Varympompi Interchange, Schimatari Interchange and Arkitsa Interchange. The Varympompi station was put into trial operation on 21/12/2011. Arkitsa station was put into trial operation on 19/12/2011 and Schimatari station put into trial operation on June of 2013 (later, due to insufficient power supply at the position).

According to the Environmental Terms of the Ionia Odos Motorway, the air pollution measurement network also includes three (3) stations, at the Evinochori MSS, at the Filippiada MSS and at the Episkopi MSS. The station installation works began in June 2018 and their full operation (after the trial period) was completed in August 2018.

For the year 2020, a complete air pollution monitoring program was implemented by the above six air pollution stations, which are operating on a 24-hour basis. The air pollution report was submitted to the competent Services. The air pollution report was submitted to the competent services (Directorate KAPA/YPEN with prot. no. 12815/228/9-2-2021, EYDE (Directorate D17) with receipt prot. no. 33677/9-2-2021 & EYDE/KSESP with receipt prot. no. 33715/9-2-2021). A similar report will also be prepared and submitted for 2021.

For the measurement of pollutants, the stations have been equipped with approved analyzers in accordance with the National Legislation (Ministerial Decision No 14122/549/E.103/2011 (FEK 488/B`/30.3.2011) "Measures to improve the air quality, in accordance with the provisions of Directive 2008/50/EC" of the European Parliament and of the Council of the European Union of 21 May 2008 on ambient air quality and cleaner air for Europe. For every 24 hours, at each station the following are recorded:

1. The pollutants CO, NO<sub>2</sub>, SO<sub>2</sub>, O<sub>3</sub> (only for PATHE motorway), PM<sub>10</sub>, PM<sub>2,5</sub>, C<sub>6</sub>H<sub>6</sub> (benzene)
2. The meteorological conditions of each installation area.

The pollutants are measured continuously throughout the day. The average primary pollution values are calculated every five minutes in the recording system that is installed at each station and connected to the analyzers. These measurements are transferred to the server of the air pollution measuring system (which is installed at Afidnes Control Center), via the Nea Odos optical fiber network, where they are stored. At the end of each month the measurements are corrected on the network server. The corrections include calibration results and analyzer limit and slip corrections. After corrections, the average hourly, eight-hour, and 24-hour values of pollutants (NO<sub>2</sub>, CO, O<sub>3</sub>, SO<sub>2</sub>, Benzene, suspended particles PM<sub>10</sub> and PM<sub>2,5</sub>) are calculated and stored.

For 2020, the measured pollutant records were as follows:

### 6.1 PATHE Motorway

#### Suspended Particles PM<sub>10</sub>

The Limit as of 01/01/2005 for PM<sub>10</sub> particles is 50µg/m<sup>3</sup> on average daily value and should not be exceeded more than 35 times per year. Also the average annual value should not exceed 40µg/m<sup>3</sup>.

Number of exceedances of PM<sub>10</sub> daily mean values over 50µg/m<sup>3</sup>

Number of exceedances	Varympompi	Schimatari	Arkitsa
Average daily value in µg/m <sup>3</sup>	0	0	0

➤ **The average daily value (50µg/m<sup>3</sup>) was not exceeded > 35 times per year**

The average annual value for 2020 was:

Average annual value in µg/m <sup>3</sup>	Varympompi	Schimatari	Arkitsa
	5,31	11,82	9,47

➤ **The average annual value (40µg/m<sup>3</sup>) was not exceeded at any station.**

#### Suspended Particles PM<sub>2,5</sub>

For suspended particles PM<sub>2,5</sub>, the Limit as of 01/01/2010 is 25µg/m<sup>3</sup> on the average annual value.

**The average annual value for 2020 was:**

Average annual value in µg/m <sup>3</sup>	Varympompi	Schimatari	Arkitsa
	3,56	8,22	6,84

**The average annual value (25µg/m<sup>3</sup>) was not exceeded at any station.**

#### NO<sub>2</sub>

The Limit as of 01/01/2010 is 200µg/m<sup>3</sup> on average hourly value and should not be exceeded more than 18 times per year. Also the average annual value should not exceed 40µg/m<sup>3</sup>.

Number of exceedances of average hourly value over 200µg/m<sup>3</sup>

Number of exceedances of average hourly value in µg/m <sup>3</sup>	Varympompi	Schimatari	Arkitsa
	0	0	0

**The average hourly value (200µg/m<sup>3</sup>)>18 times per year was not exceeded at any station**

The average annual value for 2020 was:

Average annual value in $\mu\text{g}/\text{m}^3$	Varympompi	Schimatari	Arkitsa
	47,13	31,89	21,53

- **The average annual value ( $40\mu\text{g}/\text{m}^3$ ) was exceeded only at Varympompi station.**
- **There was no exceedance of the average annual value ( $40\mu\text{g}/\text{m}^3$ ) at all other stations.**

Nevertheless, taking into account the data of previous years and their AADT, we conclude that this increase is not due to the circulation of vehicles on the motorway. Moreover, the station is located next to Nea Erythraia Avenue, thus it also counts the emissions of the vehicles that move on it.

More specifically, the table below presents the AADTs of previous years and the corresponding average annual values of the  $\text{NO}_2$  index. By comparing these values, it is clear that the increase observed cannot be related to the circulation of vehicles on the motorway since the AADT of 2020 is reduced by 18% compared to 2019.

YEAR	Average Annual Daily Traffic-AADT	Average annual value in $\mu\text{g}/\text{m}^3$
2018	22.511	38,35
2019	24.302	39,71
2020	19.935	47,13

### **CO**

The Limit as of 01/01/2005 is  $10 \text{ mg}/\text{m}^3$  (maximum daily eight-hour value).

Number of exceedances over  $10 \text{ mg}/\text{m}^3$

Number of exceedances of maximum daily eight-hour value in $\text{mg}/\text{m}^3$	Varympompi	Schimatari	Arkitsa
	0	0	0

- **The maximum daily eight-hour value ( $10\text{mg}/\text{m}^3$ ) was not exceeded at any station.**

The average annual value for 2020 was:

Average annual value in $\text{mg}/\text{m}^3$	Varympompi	Schimatari	Arkitsa
	0,25	0,19	0,12

### SO<sub>2</sub>

The Limit as of 01/01/2010 is 350 $\mu\text{g}/\text{m}^3$  as average hourly value and should not be exceeded more than 24 times per year. Also, the average daily value is 125  $\mu\text{g}/\text{m}^3$ , which should not be exceeded more than 3 times per year.



Number of exceedances of average hourly value over 350 $\mu\text{g}/\text{m}^3$

Number of exceedances	Varympompi	Schimatari	Arkitsa
Average hourly value in $\text{mg}/\text{m}^3$	0	0	0

- **The maximum average hourly value (350 $\mu\text{g}/\text{m}^3$ ) was not exceeded more than 24 times per year at any station.**

The average daily value for 2020 was:

Average daily value	Varympompi	Schimatari	Arkitsa
in $\mu\text{g}/\text{m}^3$	2,11	4,59	1,53

- **The average daily value (125 $\mu\text{g}/\text{m}^3$ )>3 times was not exceeded at any station.**

### O<sub>3</sub>

The objective as of 01/01/2010 is 120 $\mu\text{g}/\text{m}^3$  as maximum daily eight-hour value and should not be exceeded more than 25 times per year (average in 3 years).

Number of exceedances of maximum daily eight-hour value over 120 $\mu\text{g}/\text{m}^3$

Number of exceedances	Varympompi	Schimatari	Arkitsa
of maximum daily eight-hour value in $\mu\text{g}/\text{m}^3$	0	0	0

- **The maximum daily eight-hour value (120 $\mu\text{g}/\text{m}^3$ )>25 times was not exceeded at any station.**

The average annual value for 2020 was:

Average annual value	Varympompi	Schimatari	Arkitsa
in $\mu\text{g}/\text{m}^3$	15,63	37,1	27,96

### Benzene

The limit as of 01/01/2010 is 5 $\mu\text{g}/\text{m}^3$  on average annual value.

The average annual value for 2019 was:

Average annual value	Varympompi	Schimatari	Arkitsa
in $\mu\text{g}/\text{m}^3$	0,26	0,53	0,03

- **The average annual value (5 $\mu\text{g}/\text{m}^3$ ) was not exceeded at any station.**

## 6.2 IONIA ODOS Motorway

### Suspended Particles PM<sub>10</sub>

The Limit as of 01/01/2005 for PM<sub>10</sub> particles is 50µg/m<sup>3</sup> on average daily value and should not be exceeded more than 35 times per year. Also the average annual value should not exceed 40µg/m<sup>3</sup>.

Number of exceedances of PM<sub>10</sub> daily mean values over 50µg/m<sup>3</sup>

Number of exceedances	Evinochori	Filippiada	Episkopiko
Average daily value in µg/m <sup>3</sup>	3	4	4

- **The average daily value (50µg/m<sup>3</sup>)>35 times per year was not exceeded at any station**

The average annual value for 2020 was:

Average annual value in µg/m <sup>3</sup>	Evinochori	Filippiada	Episkopiko
	12,36	16,24	8,97

- **The average annual value (40µg/m<sup>3</sup>) was not exceeded at any station.**

### Suspended Particles PM<sub>2,5</sub>

For suspended particles PM<sub>2,5</sub>, the limit of average annual value as of 01/01/2015 is 25 µg/m<sup>3</sup>.

The average annual value for 2020 was:

Average annual value in µg/m <sup>3</sup>	Evinochori	Filippiada	Episkopiko
	8,33	11,01	6,13

- **The average annual value (25µg/m<sup>3</sup>) was not exceeded at any station.**

### NO<sub>2</sub>

The Limit as of 01/01/2010 is 200µg/m<sup>3</sup> on average hourly value and should not be exceeded more than 18 times per year. Also the average annual value should not exceed 40µg/m<sup>3</sup>.

Number of exceedances of average hourly value over 200µg/m<sup>3</sup>

Number of exceedances of average hourly value in µg/m <sup>3</sup>	Evinochori	Filippiada	Episkopiko
	0	0	0

- **The average hourly value (200µg/m<sup>3</sup>)>18 times per year was not exceeded at any station**

The average annual value for 2020 was:

Average annual value in $\mu\text{g}/\text{m}^3$	Evinochori	Filippiada	Episkopiko
	5,72	13,81	11,21

- **The average annual value ( $40\mu\text{g}/\text{m}^3$ ) was not exceeded at any station.**

### CO

The Limit as of 01/01/2005 is  $10 \text{ mg}/\text{m}^3$  (maximum daily eight-hour value).

Number of exceedances over  $10 \text{ mg}/\text{m}^3$

Number of exceedances of maximum daily eight-hour value in $\text{mg}/\text{m}^3$	Evinochori	Filippiada	Episkopiko
	0	0	0

- **The maximum daily eight-hour value ( $10\text{mg}/\text{m}^3$ ) was not exceeded at any station.**

The average annual value for 2020 was:

Average annual value in $\mu\text{g}/\text{m}^3$	Evinochori	Filippiada	Episkopiko
	0,19	0,15	0,17

### SO<sub>2</sub>

The Limit as of 01/01/2010 is  $350\mu\text{g}/\text{m}^3$  as average hourly value and should not be exceeded more than 24 times per year. Also, the average daily value is  $125 \mu\text{g}/\text{m}^3$ , which should not be exceeded more than 3 times per year.



Number of exceedances of average hourly value over  $350\mu\text{g}/\text{m}^3$

Number of exceedances Average daily value in $\text{mg}/\text{m}^3$	Evinochori	Filippiada	Episkopiko
	0	0	0

- **The average hourly value ( $350\mu\text{g}/\text{m}^3$ )>24 times per year was not exceeded at any station.**

The average daily value for 2020 was:

Average daily value in $\mu\text{g}/\text{m}^3$	Evinochori	Filippiada	Episkopiko
	2,14	2,30	2,57

- **The average daily value ( $125\mu\text{g}/\text{m}^3$ )>3 times was not exceeded at any station.**

### **Benzene**

The limit as of 01/01/2010 is  $5\mu\text{g}/\text{m}^3$  on average annual value.

The average annual value for 2020 was:

Average annual value in $\mu\text{g}/\text{m}^3$	Evinochori	Filippiada	Episkopiko
	0,19	0,38	0,45

- **The average annual value ( $5\mu\text{g}/\text{m}^3$ ) was not exceeded at any station.**

## **7. NOISE AND TRAFFIC VOLUME**

The year 2020, the 24-hour traffic noise measurements of the monitoring program obtained are:

- 54 24-hour traffic noise measurements at the PATHE Motorway, Metamorfossi – Loggos section
- 14 24-hour traffic noise measurements at the PATHE Motorway, Loggos – Skarfeia section
- 3 24-hour traffic noise measurements at the connecting branch of PATHE Motorway, Schimatari – Chalkida section
- 52 24-hour traffic noise measurements at the IONIA ODOS Motorway, Antirrio – Ioannina section

The above traffic noise measurements also include 24-hour traffic noise measurements following noise complaints/grievances, as sent by the Concession Project Supervisory Service or as done through the Nea Odos Customer Service Center. For the above sections, the new measurements conducted due to complaints are the following:

- PATHE motorway, Metamorfossi – Loggos section, of 54 24-hour measurements in total, 5 new 24-hour traffic noise measurements are also contained after complaints/grievances.
- PATHE motorway, Loggos – Skarfeia section, of 14 24-hour measurements in total, one (1) new 24-hour traffic noise measurement is also contained after complaints/grievances).

A total of 123 24-hour traffic noise measurements were obtained, and the result assessment of the 24-hour traffic noise measurements for 2020 shows that:

### **A. “Metamorfossi – Loggos” Section**

In this section, which is the most burdensome regarding the volume, it is necessary to group the conclusions due to different local conditions. More specifically:



1. At position P1 there is an exceedance within the settlement limit and behind a constructed sound barrier around the CHs from 16+051 to 16+650 in the direction of Lamia. This sound barrier falls within the responsibility, design and construction of DME0/D9. An on-site investigation revealed that the barrier was constructed beyond the position of the approved design and more specifically about 90 meters in the direction of Lamia. Nevertheless, the construction of the barrier is particularly poor, with the main characteristics being the gaps between the transparent PMMA sheets and the retaining wall as well as the poor fitting of the rubber gaskets that in many cases hang from the metal stands. It is recommended to monitor the phenomenon and if necessary, to take the necessary corrective actions.
2. At position P2 there is an exceedance of a rear-implemented barrier receiver that, as mentioned above, has not been constructed in its entirety, with the result that about 80 meters from the beginning of the shutter and about 100 meters from its end are missing. It is noted that the load of the side network is very heavy and contributes significantly to the final noise level.
3. At position P3 – complaint - in the area of Metamorfossi all the indicators are within the limits of the current legislation, although it should be noted that if the remaining measures of barrier of DME0/Δ9 responsibility are completed, the acoustic environment of the area will be significantly improved.
4. At positions P4, P5, P7, P13 there are exceedances due to non-implementation of anti-noise barriers for the reasons mentioned above.
5. At position P11 – complaint - there are no exceedances with the receiver within the settlement limit contrary to the 2019 measurement he had presented. To validate those mentioned above, the measurement P18 was made, the results of which are in line with those of P11. In combination with the position P12 - complaint - which does not show any exceedances neither this year nor in 2019, it is recommended to repeat the measurement and, in case of future limit violations, all necessary protect measures to be taken.
6. At positions P15, P16, P19, P20, P26, P37, P38, P39, P40, P41, P42, P44, P50, P51, P52, P54 & P55, there are exceedances but the receivers are outside of the statutory settlement limits and therefore do not require noise protection.
7. At positions P3, P6, P7, P8, P9, P10, P17, P22, P25, P28, P30, P34, P36 & P43, there is no exceedance and all of the above positions are located behind embedded barriers.
8. At positions P11, P12, P14, P46, P47, P48 there are no exceedances and the receivers are

within statutory settlement limits.

9. At positions P27, P35, P45, P49, P53, there are no exceedance and the receivers are outside statutory settlement limits.
10. At positions P21, P23 and P24, there are exceedances in receivers within the settlement limit and behind an implemented barrier, which are exclusively due to the heavily congested side network and more specifically, at the side network running through the Oinofyta settlement where the percentage of heavy-duty vehicles, which are also moving at speeds well past the 50km/h limit, is particularly high.
11. With regard to the measurements conducted to cover old and new complaints in this section, the following are noted:
12. Regarding the complaint at Oinofyta Settlement P26, although there are significant exceedances, which in part are due to the highly congested side network of the Oinofyta settlement, the receiver is outside statutory settlement limits and therefore does not require noise protection according to the existing legislation.
13. Regarding the complaint (P29) at Schimatari, the receiver is within the settlement limit and both Lden and Lnight indicators have been exceeded. For this position, an EAMYE has been drawn up and approved with prot. no YPEN/D.KAPA/7752/156/19.02.2020. The construction of the barrier is in the assignment phase, which has been postponed due to the pandemic - COVID 19.
14. Finally, the complaint (P7) investigation shows significant improvement in all indicators, all within boundaries, but an EAMYE study, which had been approved with document YPEN/DKAPA/15969/656 21/03/2018 No by the Department of Noise and Radiation of Directorate of KAPA. However, due to the location of the barrier and the significantly increased traffic load, it is recommended the measurement to be repeated and that all necessary protect measures be taken in case of continued exceedance.

#### **B. “Schimatari – Chalkida” Section**

In this section, in the total of three (3) 24-hour traffic noise measurements, there is NO exceedance and no additional measures are necessary.

#### **C. “Loggos – Skarfeia” Section**

As regards positions P56-P70 and P73 of Loggos – Skarfeia section, no exceedances were presented. The following were observed at this section:

1. At positions 56, 59, 70 & 73 no exceedances were observed and the receivers are within the settlement limit. Given that the measurement P73 is totally marginal for the Lnight index, the measurement will be included in next year’s program,



2. At Position 57 no exceedances were observed and the receiver is behind an implemented barrier and outside the established settlement limit,
3. At Position 58 no exceedances were observed and the receiver is outside the established settlement limit,
4. At Position 60 no exceedances were observed and the receiver is behind an implemented barrier and within an established settlement limit,
5. Positions 61, 62, 63, 65 and 66 were found in the  $L_{night}$  index. Upon approval of the 2019 program, the elaboration of EAMYE (Computational and Experimental Studies of Acoustic Waves) has been proposed, which is in the phase of assignment by the competent body.
6. At Position 64 no exceedances were observed. The receiver is within the settlement limit but due to the limit value in the  $L_{night}$  index the monitoring will continue in next year's program.
7. At Position 68, both the  $L_{den}$  and  $L_{night}$  indices were exceeded. Receiver outside the settlement limits.

#### **D. IONIA ODOS “Antirrio – Ioannina” Section**

In this section and in positions P50 of all P52 traffic noise measurements performed, there is NO exceedance of an indicator. Exceedance is observed in two cases, entirely marginal in position P22 and position P50 and only for the  $L_{night}$  indicator where there are houses outside the settlement boundary. More specifically, the house in Position P50 was not expropriated during construction, at the request of its owner. In any case, the evolution of the phenomenon will be monitored, but it is recalled that, under the current legislation, the above indicators do not require anti-noise protection.



However, there are several measurements that are close to the statutory thresholds and need to also be monitored in the next program, as the approved environmental terms require.

For the year 2020, the monitoring program O.K.TH. (Road Traffic Noise) that has been submitted and approved by the Directorate of KAPA/YPEN with the prot. no the YPEN/DKAPA/80711/1422/26-11-2020.

The noise measurement results and records of the road traffic volume, with the position, date, and measurement time interval, the prevailing meteorological conditions, the contact details and name of the measurement manager were recorded in a results sheet. In the case of systematic excess of the current limit for road traffic noise recording, the construction and

operation of the project entity shall take the necessary measures to address the excesses.

- Before each 24-hour traffic noise measurement, calibration of the instruments was performed using specific acoustical calibrator, so that the reliability of the results be monitored during the recordings of the traffic noise environment.
- The following are mentioned for all measurement positions: the exact position, the exact time period and day of measurement, while it is noted that the measurement was performed under lack of rain and strong wind conditions, while for conditions of light wind, speed < 3 m/sec, always the use of a special windbreaker cover for the microphone was ensured. No traffic noise recordings were performed if other sources of noise pollution were noted in the immediate environment of the recording position, e.g. residents gatherings, construction of roads, buildings etc., or if the traffic flow was not the usual (e.g. weekends or holidays), or if the traffic fluidity was interrupted or disturbed from any random event, such as accident, etc.

In every 24-hour measurement, the following were recorded:

- the L1, L10, L50, L95, L99 indexes as well as the maximum (Lmax) and minimum values (Lmin);
- the O.K.TH. (Road Traffic Noise) level L10 (18-hour); & the level A-weighted equivalent LAeq (08.00–20.00);
- the level A-weighted equivalent LAeq (24h); and
- the Lden, Lday, Levening & Lnight indicators, as well as the Ld-e of existing legislation in line with JMD with No 211773/2012 (FEK 1367/B/27-4-2012).



For 2020, Road Traffic Noise Monitoring program has been completed and approved. For 2021, similar program shall be implemented, which is expected to be completed within the year (recording of 24-hour measurements in selected positions), when it shall be submitted to the Directorate of KAPA/YPEN for approval.

It is noted that the traffic volume is monitored daily at the section from Metamorphossi to Skarfeia of PATHE motorway, at the transit level at all toll stations (Afidnes, Kapandriti, Malakassa, Oinofyta, Thebes and Tragana), and are reported in monthly reports. For 2020, the Annual Average Daily Traffic was calculated at 19,935 transits (in both directions) at the

Metamorfossi – Skarfeia section of PATHE, while the Annual Average Daily Traffic was calculated at 4,767 transits (in both directions) at IONIA ODOS.

The tables below show the CHs of 24-hour measurements in all motorway sections. More specifically:

**Section: Metamorfossi – Loggos**

S/N MEASUREMENT	AREA	DIRECTION	CH.
P1	Metamorfossi	Towards Lamia	16+300
P2	Metamorfossi	Towards Athens	16+320
P3	Metamorfossi	Towards Athens	16+320
P4	Kifissia	Towards Lamia	20+320
P5	Kifissia	Towards Lamia	20+520
P6	Kifissia	Towards Lamia	20+880
P7	Kifissia	Towards Athens	21+080
P8	Kifissia	Towards Athens	21+650
P9	Kifissia	Towards Lamia	21+450
P10	Kifissia	Towards Athens	21+650
P11	Kifissia	Towards Athens	21+780
P12	Kifissia	Towards Athens	22+150
P13	Kifissia	Towards Lamia	22+800
P14	Nea Erythraia	Towards Lamia	23+520
P15	Nea Erythraia	Towards Lamia	23+830
P16	Krioneri	Towards Athens	25+100
P17	Ekali	Towards Lamia	24+430
P18	Kifissia	Towards Athens	21+780
P19	Afidnes	Towards Lamia	34+500
P20	Malakassa	Towards Lamia	44+100
P21	Oinofyta	Towards Athens	59+250
P22	Oinofyta	Towards Athens	59+380
P23	Oinofyta	Towards Athens	59+530
P24	Oinofyta	Towards Athens	59+680
P25	Oinofyta	Towards Athens	59+760
P26	Oinofyta	Towards Athens	59+940
P27	Oinoi	Towards Athens	62+880
P28	Schimatari	Towards Athens	65+900
P29	Schimatari	Towards Athens	65+960
P30	Schimatari	Towards Athens	66+750
P34	Kastro	Towards Athens	115+590
P35	Tragana	Towards Lamia	137+250
P36	Tragana	Towards Athens	137+670
P37	Municipality of Dafnoussia	Towards Lamia	146+240
P38	Municipality of Dafnoussia	Towards Lamia	146+700
P39	Livanates	Towards Athens	146+900
P40	Municipality of Dafnoussia	Towards Lamia	148+300

**FOR THE ENVIRONMENTAL MANAGEMENT AND IMPLEMENTATION  
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P41	Livanates	Towards Lamia	150+050
P42	Municipality of Dafnoussia	Towards Lamia	150+800
P43	Livanates	Towards Lamia	151+250
P44	Municipality of Dafnoussia	Towards Athens	152+200
P45	Arkitsa	Towards Athens	153+840
P46	Arkitsa	Towards Lamia	153+880
P47	Arkitsa I/C	Towards Athens	154+780
P48	Kedros	Towards Lamia	157+350
P49	Municipality of Dafnoussia	Towards Athens	158+250
P50	Municipality of Dafnoussia	Towards Lamia	158+900
P51	Achlades	Towards Athens	159+140
P52	Municipality of Dafnoussia	Towards Athens	160+780
P53	Municipality of Dafnoussia	Towards Athens	161+320
P54	Municipality of Dafnoussia	Towards Lamia	162+280
P55	Louros	Towards Athens	162+970
P71	Triantafyllia	Towards Athens	158+580
P72	Triantafyllia	Towards Athens	158+580
P74	Kifissia	Towards Lamia	22+485

**Section: Schimatari – Chalkida**

S/N MEASUREMENT	AREA	DIRECTION	CH
P31	Kalochori – Pantichi	Towards Chalkida	6+500
P32	Vathi	Towards Chalkida	7+000
P33	Vathi	Towards Chalkida	7+500

**Section: Loggos - Skarfeia**

S/N MEASUREMENT	AREA	DIRECTION	CH.
P56	Kamena Vourla	Towards Athens	170+000
P57	Kamena Vourla	Towards Lamia	171+350
P58	Agios Konstantinos	Towards Lamia	173+340
P59	Kamena Vourla	Towards Lamia	176+900
P60	Kamena Vourla	Towards Lamia	178+680
P61	Kamena Vourla	Towards Lamia	179+100
P62	Kamena Vourla	Towards Lamia	179+190
P63	Kamena Vourla	Towards Lamia	179+300
P64	Kamena Vourla	Towards Lamia	179+600
P65	Kamena Vourla	Towards Lamia	179+690
P66	Kamena Vourla	Towards Lamia	179+785
P68	Kamena Vourla	Towards Lamia	182+520
P70	Patereika	Towards Lamia	179+600
P73	Kamena Vourla	Towards Lamia	179+600

**Section: Ionia Odos**

**FOR THE ENVIRONMENTAL MANAGEMENT AND IMPLEMENTATION  
OF ENVIRONMENTAL TERMS DURING OPERATION AND MAINTENANCE**

<b>S/N MEASUREMENT</b>	<b>AREA</b>	<b>DIRECTION</b>	<b>CH.</b>
P1	ANTIRRIO	Towards Antirrio	4+960
P2	MAKYNEIA	Towards Antirrio	8+850
P3	RIZA	Towards Antirrio	10+700
P4	RIZA	Towards Ioannina	11+080
P5	RIZA	Towards Antirrio	11+210
P6	CHANIA GAVROLIMNIS	Towards Ioannina	18+490
P7	AGIOS GEORGIOS	Towards Ioannina	27+140
P8	AGIOS GEORGIOS	Towards Ioannina	27+520
P9	STOUMPEIKA	Towards Antirrio	30+350
P10	AGIOS THOMAS	Towards Ioannina	33+700
P11	AGIOS THOMAS	Towards Ioannina	33+980
P12	AGIOS THOMAS	Towards Antirrio	34+400
P13	AGIOS THOMAS	Towards Antirrio	35+250
P14	TRELAGKATHA	Towards Antirrio	35+830
P15	TRELAGKATHA	Towards Ioannina	35+820
P16	TRELAGKATHA	Towards Antirrio	36+090
P17	TRELAGKATHA	Towards Ioannina	36+260
P18	TRELAGKATHA	Towards Ioannina	36+950
P19	AGRILIA	Towards Antirrio	37+500
P20	NEA YDRAGOGEIA	Towards Ioannina	39+600
P21	NEA YDRAGOGEIA	Towards Antirrio	39+600
P22	KEFALOVRYSSO	Towards Antirrio	47+600
P23	KEFALOVRYSSO	Towards Ioannina	48+360
P24	KEFALOVRYSSO	Towards Ioannina	48+790
P25	KEFALOVRYSSO	Towards Antirrio	48+880
P26	CHALIKI	Towards Ioannina	49+800
P27	KEFALOVRYSSO	Towards Antirrio	55+150
P28	KEFALOVRYSSO	Towards Ioannina	55+120
P29	RIGANI	Towards Antirrio	67+120
P30	RIVIO	Towards Antirrio	86+180
P32	KAMPOS AMFILOCHIAS	Towards Antirrio	107+650
P33	KRIKELLOS	Towards Ioannina	108+860
P34	KRIKELLOS	Towards Antirrio	109+180
P35	KRIKELLOS	Towards Ioannina	111+400
P36	MAKRIRACHI	Towards Ioannina	114+400
P37	PSILA ALONIA	Towards Ioannina	132+450
P38	AGIOS DIMITRIOS - ARTA	Towards Ioannina	139+400
P39	AGIOS DIMITRIOS - ARTA	Towards Ioannina	139+700
P40	AGIOS DIMITRIOS - ARTA	Towards Ioannina	141+100
P41	ARTA	Towards Antirrio	145+130
P42	ARTA	Towards Ioannina	145+190
P43	ARTA	Towards Ioannina	145+370
P44	ARTA	Towards Ioannina	146+300

P45	ARTA	Towards Antirrio	147+600
P46	ARTA	Towards Antirrio	149+900
P47	KAMPI	Towards Ioannina	153+800
P48	KAMPI	Towards Antirrio	153+880
P49	AMMOTOPOS	Towards Ioannina	159+650
P50	NEOS GORGOMILOS	Towards Antirrio	169+600
P51	NEOS GORGOMILOS	Towards Antirrio	173+400
P52	EPISKOPIKO	Towards Antirrio	195+410
P53	EPISKOPIKO	Towards Ioannina	196+300
P54	EPISKOPIKO	Towards Ioannina	196+600

## **8. WASTE MANAGEMENT**

### **8.1 Liquid wastes**

A comprehensive Environmental Management Plan has been developed and implemented, which includes the procedure for the management of hazardous liquid waste in accordance with the environmental terms and the existing legislation, while proper management documentation is requested by the subcontractors. Relevant archive has been created with the agreements and waste delivery receipts of authorized mineral oil management companies.

For the hazardous liquid waste resulting from the operation and maintenance works on the motorway, the concession company follows all procedures provided by the current legislation and cooperates with management entities authorized for environmental purposes.

Inspections are performed at the construction and maintenance work sites and the corresponding check list table is filled. Based on the checks, in case of failure to comply with the provisions, guidelines (corrective actions) for compliance are provided. The implementation of the corrective actions is checked through new inspections based on the check list.

Furthermore, the concession company submits annual reports for waste producer at the electronic waste registry (EWR) pursuant to Article 42 of Law 4042/2012 (FEK 24/A/13.02.2012), as amended by Article 157, paragraph 1 of Law 4389/2016 (FEK 94/A/27.05.2016) and JMD 1/1 (FEK 1/B'/04.01.2017). For the year 2019, the relevant report of waste producer was submitted to the electronic waste registry (EWR) by the concession company for every JMD ETA of the motorway separately. For 2020 the process is expected to be completed in accordance with the deadlines.

### **8.2 Solid wastes**

The Concessionaire has contracted with the subcontractor for the cleaning and the collection of solid waste from the motorway, which are then transferred to appropriate licensed premises.

For the hazardous solid waste resulting from the operation and maintenance works on the motorway, the concession company follows all procedures provided by the current legislation and cooperates with management entities authorized for environmental purposes.



Inspections are performed at the construction and maintenance work sites and the corresponding check list table is filled. Based on the checks, in case of failure to comply with the provisions, guidelines (corrective actions) for compliance are provided. The implementation of the corrective actions is checked through new inspections based on the check list.

Furthermore, the concession company submits annual reports for waste producer at the electronic waste registry (EWR) pursuant to Article 42 of Law 4042/2012 (FEK 24/A/13.02.2012), as amended by Article 157, paragraph 1 of Law 4389/2016 (FEK 94/A/27.05.2016) and JMD 1/1 (FEK 1/B'/04.01.2017). For the year 2019, the relevant report of waste producer was submitted to the electronic waste registry (EWR) by the concession company for every JMD ETA of the motorway separately. For 2020, the process is expected to be completed in accordance with the foreseen deadlines.

### **8.3 Waste Producer Table – EWR**

Pursuant to Article 42, of Law 4042/2012 (FEK 24/A/13.02.2012), as amended by Article 157, paragraph 1 of Law 4389/2016 (FEK 94/A/27.05.2016) and JMD 1/1 (FEK 1/B'/04.01.2017), the Electronic Waste Registry was established, and by JMD 43942/4026 (FEK B' 2992/19.09.2016), liable for the electronic recording and registration are every organization or enterprise the establishments of which produce waste and falling within the scope of Chapter A of Law 4014/2011 (A' 209).

For PATHE as well as Ionia Odos motorway, the NEA ODOS S.A. was registered in the Electronic Waste Registry (Reg. No 1739), as it falls within the scope of the provisions of Law 4014/2011,

since in accordance with the No DIPA/ 37674/2016 (FEK 2471/B/10.08.2016), the motorways fall under Group 1 projects (Air and land transportation projects) – Road building, S/N 1, and under subcategory A1.

Fluorescent tubes and other mercury-containing waste, lead batteries, tires collected from the motorway, engine, gear and lubricating oils, iron and steel, plastics, animal tissue waste (dead animals), plant-tissue waste, and waste produced by the operation and maintenance works on the motorway and the quantity and delivery mode to each approved Alternative Management System of which is recorded.



Moreover, the company responsible for the operation NEA ODOS S.A., in the context of corporate social responsibility, has contracted Alternative Management System companies and recycles paper, plastic, batteries, used/damaged electrical and electronic equipment. Additionally, the company responsible for the operation has a certified environmental quality management system certified by ISO 14001:2015. For the year 2019, the relevant report of waste producer was submitted to the electronic waste registry (EWR) by the concession company for every JMD ETA of the Concession Project separately. For 2020, the process is expected to be completed in accordance with the deadlines.



For all previous years (before the operation of EWR), NEA ODOS S.A. has prepared and submitted the relevant reports for waste producer pursuant to JMD 13588/725/06 and on the basis of Law 2939/2001 (and its amendment Law 3854/2010).



## 9. CLEANING AND MAINTENANCE

All cleaning and maintenance work taken place during the second semester of 2020 and for which the compliance with the Environmental Terms was checked, are the following:

- Vegetation pruning and maintenance.
- Garbage collection by garbage truck.
- Advertising billboard removal.
- Dead animal removal.
- Drain and culvert cleaning and maintenance.
- Sanitation system gutter slots cleaning.
- Drainage and other hydraulic works cleaning.



- Manual waste collection.
- Sweeping/Cleaning.
- Parking Area cleaning and washing.
- WC cleaning
- Bins replacement.
- Fencing Repair.
- Metal safety rails replacement
- Tunnel Maintenance.
- Road Marking Works.

Compliance with the E.T. relating to all the above tasks are recorded monthly in the “checklists” and in the corresponding semi-annual, annual tables per JMD annexed hereto.



## 10. ACCIDENTS – ACCIDENTAL POLLUTION – ACTION PLAN

The Concessionaire has prepared an Action Plan for emergency situations, in which the measures for the timely collection and removal of hazardous substances after a relevant incident on the motorway are described, designed to prevent the pollution of waterways, soil, or wider environment of the motorway. The Plan is an Appendix to the Police and Firefighting Agreement conducted between the Concessionaire and the Ministry of Interior, the Police and the Fire Department and includes all the measures to be taken and the necessary equipment to be used by the Concessionaire in case of an accident and leakage of non-biodegradable substances.

It is also highlighted that during incident of hazardous cargo management, the competent bodies of the Fire and Traffic Departments shall be entirely in charge of the coordination. The Concessionaire's role is auxiliary with a focus on the traffic management (signs, blocks, diversions) at the direction of the relevant departments, the restoration of the road surface (cleaning, obstruction removal, etc.) and infrastructures (damages, rails restoration, etc.) and the re-opening of the relevant road after the end of the incident.

As primary and essential tool for addressing accidental leakage, which creates an immediate risk of surface water and soil pollution, the use of adsorbents, such as sand, sawdust, or special geotextile is provided immediately after the escape of the hazardous cargo. Such materials are immediately available by the Concessionaire, the patrol units and the maintenance contractor for direct intervention.

The decontamination process, as well as the transportation and final management and disposal of the polluted adsorbents and the hazardous waste produced by such an incident shall be done in accordance with the existing legislation with appropriately authorized decontamination, transfer and management of hazardous waste companies for the timely addressing of incidents on the motorway.

## 11. SPECIAL TERMS (E.G. TANKS, DRAINAGE MANAGEMENT)

- On-site infrastructure

A total of 9 Winter Maintenance stations have been environmentally authorized (with No 122399/1-4-2010 of EYPE) along the PATHE motorway. The installed and operating stations are located in the areas of Markopoulo, Schimatari, Thebes, Akraifnio, Martino, Tragana and Ag. Konstantinos (Latomeio).

For IONIA ODOS, the installed stations are located in the areas of Messolonghi, Amfilochia, Filippiada and Terovo.

- Visual disturbance by signs

All advertising billboards and signs within the concession limit have been removed. Regular inspections are carried out throughout the motorways, the advertising billboards - signs located within the expropriation limit are removed.

- Tunnel fire safety.

There is cooperation with the Fire Department. Fire drills under "Large Scale" conditions was conducted on 28/3/2018 at Knimida Tunnel. The tunnel firefighting equipment is functional, with a network of 6" pipelines, under 7 Atm stable pressure, and HDS every 50m in each tunnel over 500m in length, with two taps, a storz and a 25m hose, in accordance with the Construction Study.

- Pollution Control Units

With the completion of the motorway improvements in Yliki area, the retention – infiltration rainwater runoff tanks have been constructed at the site, as provided by E.T. d-29.5 of JMD 101617/22.09.2006 for the Yliki-Kastro section.

It should be noted that the Concessionaire has designed and disposes a pollution response plan to be implemented in case of accidental pollution that will include the use of these tanks in application of the ETs and its contractual obligations.

Two of the total seven Pollution Control Units have not been constructed in the section "Agios Konstantinos - Kamena Vourla", which are planned to be constructed in accordance with the E.T. d-32 of JMD 85676/30.07.2002. The Greek State is expected to install the remaining two tanks.

- Water Quality

Within the framework of the water-monitoring program, measurements were carried out for 2020, which are distributed as follows:

- 15 samplings in two sets on the IONIA Motorway, i.e. a total of 30 samplings
- 4 samplings in a set on the PATHE Motorway at Yliki section.

The samplings were collected in special sterile collectors with a capacity of 2 liters provided by a specialized laboratory that performed the chemical analysis.

In detail, the following were performed:

- IONIA ODOS motorway:

<b>IONIA ODOS</b>		Samplings (2020)	Samplings (2020)
		Summer season	Winter season
<b>A</b>	<b>Antirrio - Kefalovryssso</b> (AEPO: 142128/2005)	29/06/2020	24/09/2020
1	Acheloos Delta	2	2
2	Messolonghi Lagoon - Aitoliko	1	1
3	Evinos mouth	2	2
<b>B</b>	<b>Agrinio Bypass</b> (AEPO: 84987/1997)		
1	Acheloos River	2	2
2	Messolonghi Wetland - Aitoliko	1	1
3	Ozeros Lake	1	1
<b>Γ</b>	<b>Kouvaras - Kompoti,</b> <b>Filippiada - Eleousa</b> (AEPO: 141564/2005)		
1	Louros River	2	2
2	Katafourko Lagoon	1	1
3	Amvrakia Lake	1	1
<b>Δ</b>	<b>Arta Bypass</b> (AEPO: 120756/1997)		
1	Louros River	1	1
2	Arachthos River	1	1
	<b>TOTAL OF MEASUREMENTS:</b>	<b>15</b>	<b>15</b>

- PATHE Motorway at Yliki section:

PATHE		Samplings (2020)
A	YLIKI	22/12/2020
1	Voiotikos Kifissos	2
2	Yliki Lake	2
TOTAL OF MEASUREMENTS:		4

The monitoring parameters for all samples are listed in the table below.

#### Monitoring Parameters

AGENT TYPE	CHEMICAL AGENT	MEASURING UNIT
<b>fats &amp; oils</b>	fats & oils	mg/L
	temperature	°C
<b>physicochemical analysis</b>	pH (ενεργός οξύτητα)	4-10
	conductivity	μS/cm
	salinity	ppt
	turbidity	NTU
	total hardness	French degrees
<b>organic load</b>	BOD <sub>5</sub> (Biochemical oxygen demand)	mg/l
	COD (Chemical Oxygen Demand)	mg/l
	TOC (Total organic carbon)	mg/l
	DO (Dissolved Oxygen)	mg/l
<b>solids</b>	TSS (Total Suspended Solids)	mg/l
	TDS (Total Dissolved Solids)	mg/l
<b>Nutrient ions</b>	NO <sub>3</sub>	mg/l
	NO <sub>2</sub>	mg/l
	PO <sub>4</sub>	mg/l
	αμμωνιακά (NH <sub>4</sub> )	mg/l
	SO <sub>3</sub> <sup>-</sup>	mg/l
	F <sup>-</sup>	mg/l
	Cl <sup>-</sup>	mg/l
	Na <sup>+</sup>	mg/l
K <sup>+</sup>	mg/l	

	<b>Ca<sup>2+</sup></b>	<b>mg/l</b>
	<b>Mg<sup>2+</sup></b>	<b>mg/l</b>
<b>metals</b>	Pb	μg/l
	Cd	μg/l
	Fe	μg/l
	<b>As</b>	<b>μg/l</b>

By observing the results it can be clearly identified that, as regards the seasonality of the measurements, no significant differentiation was observed.

Near Nea Odos (both Ionia Odos and PATHE) there are various sources of pollution of the adjacent water bodies, to which the exceedance of the concentrations of certain measured parameters can be attributed to a large percentage. The motorway runs through many crops but also passes through many settlements, thus the water bodies receive pesticides, fertilizers and household waste. So, mainly during the summer period, agricultural and other anthropogenic activities of the surrounding area may place severe strain on the water bodies.

It is briefly stated that for the IONIA ODOS motorway:

- ✓ There were no excessive concentrations of cadmium, lead and arsenic in any set and for any sample.
- ✓ There were no excessive concentrations of iron and in many cases even the drinking water limit was met.
- ✓ There was no overrun/exceedance on either BOD or COD in the case of rivers and lakes that are directly affected by the motorway. It is obvious that the above conclusion excludes lagoons and places that are heavily mixed with seawater and are far from being affected by the impact of the motorway.
- ✓ There was no exceedance of the limits of sulfate, chlorine, ammonia, fluorine, phosphate, nitrate and nitrite ions in the case of rivers and lakes directly affected by the motorway. It is obvious that the above conclusion excludes lagoons and places that are heavily mixed with seawater and are far from being affected by the impact of the motorway.
- ✓ Especially for the Evinos river mouth, it should be noted that the differences observed in the prices of the two sets are exclusively related to the fact that the water of the river is mixed with seawater. The percentage of seawater in the sample obviously affects both indicators such as conductivity, salinity and suspended solids but also organic factors such as BOD and COD. For this reason and due to the large distance of the samples from the area of influence of the motorway in the next sets, it is proposed for these samples to be taken upstream and downstream of the motorway axis to draw safer and comparable conclusions to other rivers and streams.

For PATHE motorway – YLIKI SECTION:

- ✓ The total of the samples almost completely satisfies the limits of drinking water, a fact that demonstrates the non-strain of water bodies from the operation of the motorway. At this point It should be noted that the water bodies of both Yliki and Voiotikos Kifissos are of great environmental importance and the fact of their zero strain from the motorway, a section with particularly high traffic, proves the completeness and effectiveness of the environmental management of the road.

Taking into account the overall results of all the examinations (analyzes), the operation of Nea Odos (IONIA ODOS & PATHE – YLIKI REGION), which places severe strain on the water bodies, may be characterized as negligible in relation to the other anthropogenic activities, as the comparison of the upstream and downstream results of Nea Odos (both in Ionia and PATHE) for each water body does not show any significant change.

The full report includes in detail the positions of the measurements and the values of the parameters, is kept by the Concessionaire and is at the disposal of any interested party upon request.

## **12. PLANTINGS – MAINTENANCE OF VEGETATION**

The Concessionaire has contracted with a Subcontractor for the maintenance and management of the vegetation and the plantings.

## **13. CONCESSIONAIRE'S ENVIRONMENTAL DEPARTMENT**

The Concessionaire provides an Environmental department with specialized personnel, which is responsible for the inspection and compliance with the E.T. of the motorway entire length. The Concessionaire is also cooperating with special advisor in order to create a group of scientists that covers the extended range of the environment. The group of scientists consists of: Civil Engineer – Transportation Expert – Acoustical Engineer, Environmentalist – Environmental Planner, and Environmentalist – Chemist – Acoustical Engineer, to fully meet the inspection needs of the E.T. for the road project.

## **14. REPORTS (SEMI-ANNUAL – ANNUAL – SUBMISSIONS)**

For the year 2020, the 1st semi-annual Report of Environmental Monitoring of the Concession Project under study, which was submitted by the Concessionaire under prot. no. 47905/28.07.2020 letter of the Supervisory Authorities and GPDD/YPEN (D17 receipt prot. no.: 16745-30.07.2020, DIPA receipt prot. no. 74571/4583-30.07.20 & KSESP receipt prot. no. Γ/5498-30.07.20), has been drafted.

## **15. MONTHLY FOLLOW UP – CHECK LISTS**

Based on the Environmental Monitoring and Control Program and the Environmental Management System, the “Tables For the Implementation of the Environmental Terms” are established, outlining the ways and methodology of the necessary actions, in order to ensure the implementation of the Environmental Terms.

Environmental supervisors, in collaboration with the project engineers, perform regular (monthly) checks and complete the control tables, i.e. the implementation of the "Environmental Monitoring and Control Program". They also provide the necessary guidelines or directions based on the Environmental Monitoring and Control Program for any environmental issue that arises.



After each regular (monthly) check, the corresponding checklist is filled out, which shows deviations from the implementation of the environmental terms identified by the inspections. The same table provides the proposed corrective actions. The tables are sent to the company responsible for the operation to take all necessary actions and the appropriate measures to comply with the environmental law and the environmental terms of the project. In the following recheck, it is examined whether all the necessary measures and the proposed corrective actions have been taken and the corresponding fields of the monthly checklist are filled.

The Environmental Management System (EMS), which is implemented by the company responsible for the operation, consists of the Manual, the Procedures, the Work Instructions related to the environment and the compliance with the environmental requirements of the project. The environmental management manual, procedures and instructions are applied uniformly throughout the project and are constantly evolving to meet project needs.

## **16. INSPECTIONS BY ENTITIES FINES**

For 2020, no environmental deterioration problems have been identified caused by the operation and maintenance of the motorways, and no fines have been imposed on the company responsible for the operation.

## **17. CERTIFICATIONS**

NEA ODOΣ S.A. has developed and implemented a common Integrated Management System (IMS) resulting from the integration of the Quality, Environment and Safety & Health Systems applied by the company. The aim of the IMS is to ensure the most efficient management of quality, environmental and S&H issues by eliminating overlapping procedures and controls.

Furthermore, NEA ODOS S.A. has designed and implemented a Road Safety Management System, which has been certified according to the international standard ISO 39001:2012, making it the first second generation Concession Company to receive such certification, which is a milestone for the safe and efficient fleet management, and demonstrates the company's commitment to implement safe practices on the motorway.

Additionally, NEA ODOS S.A., recognizing the need for the smooth operation of the motorways falling within its responsibility, designed a Business Continuity Plan on which it relied for the implementation of a Business Continuity Management System (BCMS). In 2020, BCMS was certified according to the international standard ISO 22301:2012, thus making NEA ODOS S.A. the first Concessionaire to receive the relevant certification.

Collectively, NEA ODOS S.A. is certified according to the following International Standards:

- ISO 9001 (Quality Management System)
- ISO 45001 (Health & Safety Management System)
- ISO 14001 (Environmental Management System)
- ISO 39001 (Road Traffic Safety Management System)
- ISO 22301 (Business Continuity Management System)

On 28 and 29/9/2020, the planned annual inspection was carried out by the independent certification body Bureau Veritas on all activities of NEA ODOS S.A. and in accordance with the International Standards: ISO 9001 (Quality Management System), ISO 45001 (Health & Safety Management System), ISO 14001 (Environmental Management System).

On 2-4/9/2020, the planned annual inspection was carried out by the independent certification body TUV Hellas, in accordance with the International Standard ISO 39001 (Road Safety).

On 13-15/10/2020, the planned annual inspection was carried out by the independent certification body TUV Hellas, in accordance with the International Standard ISO 22301 (Business Continuity)

Following the above inspections, the independent bodies recommended the continuance of the Certifications for all standards and for at least one year until the next scheduled annual inspection.



**18. ENVIRONMENTAL BUDGET**

The required percentage for the total operating and maintenance of the motorway budget required to fully comply with the Environmental Terms and restrictions of the relevant JMD-ETA has been secured as a matter of priority. Expenditure on environmental protection projects is given in the annual progress reports on compliance with the Environmental Terms.

Investment Categories for the Environment	2020 (in €)
Environmental Studies (EIA, TEPEM, Renewal Studies, ETA, Computational and Experimental Studies of Acoustic Waves, Environmental Authorization of accompanying works and activities, etc.)	
Vegetation Protection and Maintenance and new planting	
Traffic noise monitoring program	
Environmental Advisors and personnel for monitoring the implementation of the E.T.	
Atmospheric Pollution and Meteorological Data Stations Operation and Air Pollution Monitoring	
Certifications It refers to the cost of the company integrated system which is included in ISO 14001:2015	
Materials Recycling and Alternative Waste management	
Environmental Education and Training	
<b>TOTAL:</b>	

## 19. CORPORATE SOCIAL RESPONSIBILITY

Nea Odos compiles a Corporate Responsibility Report in accordance with the Global Reporting Initiative (GRI) standard, the GRI Standards, and meets the Baseline Selection criteria (in accordance with: Core option).

The Report covers all the core and substantial issues that NEA ODOS S.A. has identified and focuses on, including environmental issues.

The Reports are issued on an annual basis and cover the 5 Corporate Responsibility pillars for Operation & Maintenance activities:

- Road Safety
- Quality on Provision of Human Resources Services
- Caring for the Environment
- Collaboration with Local Communities and Social Contribution

The Corporate Responsibility Report is posted at <http://www.neaodos.gr>



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